

International Abstract of Surgery

SUPPLEMENTARY TO

Surgery, Gynecology and Obstetrics

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MICHAEL L. MASON AND SUMNER L. KOCH

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H LM J E I KIRK TE A D E MCN LL M CRICE I ME TZE IO N UW F T JO P
O NEIL CL 'DE D P R LL H R Y W PLA M YZ J S EY RITT BE J MIN F R LLER H Y
L SA RD I T G J SHA I C TR STE I A C LB T J T OMA

ORTHOPEDIC SURGERY

EL N J BERKE S W LTF P BLOU T W M ARTH R CLA A I LL C C N H EARL CO WELL
M URIC L D R E T V F TO C C G Y G E CH N EL FRED RI K A JOSTES PH I
LE R Y C LO T N R DOLP S R CI A O Y F S LA SO TH T A THL WEILA D

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HA TU G CH L S H HE COC A J M LA

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THOM S D ALLE SIM F A D W LL M A N J G R R R MCA LI L H L M C Y
V R IL WESCOTT

SURGERY OF THE EAR

J C BR LL C C B J F I L G R N A J T M LL

SURGERY OF THE NOSE THROAT AND MOUTH

J M C BR S ELL J IN F D C S W F W I M G H M CE R M A F
J MEST M LS

JANUARY, 1932

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Examnat. f. th. Esophagu

Mo. H. P. Ham. rhag. t. th. Esophagu
at B. rib. and. the. Ad. R.

SMEAD L. F. Spo. t. R. pt. f. th. Esoph.
gu

M. P. R. D. W. G. A. M. thod. f. P. H. i. Y. t.
m. t. f. Car. ma. f. th. Esoph. gu

Sau. S. rg. ry. of. th. M. d. t. m.

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Pistocchi G. F. ps. ling. P. nt. t. s.

Gastro-Intestinal Tract

LA. M. R. J. W. A. malies. th. T. pography. f.
th. Alim. tary. T. t.

St. w. a. M. J. f. e. can. ou. Les. f. th.
Alim. tary. T. t.

De. B. cl. F. Wh. t. M. y. B. E. pest. d. f. m.
S. g. ry. Canc. f. th. D. g. st. Tract.

H. L. S. r. O. Reg. rd. g. th. C. d. t. f. th. J.
tram. I. G. glia. th. St. ma. h. C. es. f.
Gast. us.

H. L. S. t. O. On. th. N. t. re. f. I. y. l. ru. Aff. t.
Wh. ch. S. mula. U. lcu.

M. W. G. Th. P. ogn. d. Seq. l. x. f.
I. ept. U. l.

LL. Z. G. F. U. rs. f. th. Neopyl.
J. S. S. A. n. w. s. es. f. P. r. f. rat. g. U. l. rs. f.
th. St. m. h. d. D. od. m.

L. v. F. H. Th. M. g. m. t. f. P. pt. c. Ll.
K. J. E. Th. Med. l. d. S. rg. l. T. at.
m. t. f. Typ. l. Gast. od. od. nal. U. l. rs.

Ca. r. A. D. od. l. Spots.
W. ur. W. C. J. P. r. r. so. H. A. L. t. R. ult.
D. od. en. l. U. l.

CLA. r. T. W. d. M. F. M. H. sch. pr. u. g.
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R. F. W. Th. S. rg. l. T. tm. t. f. Ca.
ma. f. th. C. l.

F. s. H. S. rg. ry. f. th. Lo. l. H. Ca.
l. ma. f. th. C. l.

W. K. R. M. Th. Ch. g. g. P. t. f. Ap.
pe. duct. Ad. l.

NO. A. L. Mech. n. l. Oc. l. f. th. I. t.
Ap. pe. d. tis.

R. v. A. B. d. M. so. J. B. F. rs. f. l. m.
port. nce. th. Diff. ential. Diagn. os. l.
Ch. l. eystic. D. ews. e. and. Pept. U. l.

L. e. Gall. Bladd. r. Pa. r. s. and. Spl. n.
k. w. r. r. e. I. M. J. d. nd. th. Appl. cat.
of. th. A. d. R. gh. nd. th. U. b. l. n. og.
Test.

W. K. E. L. C. P. G. and. M. c. M. D. J. No.
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Uterus

N. z. F. E. P. r. n. pl. d. Tech. q. I. l. ed.
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N. t. og. no. S. b. t. es. f. m. th. I. t. t. th.

3 M. th. 4

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 f Rest rat f F act n 3 ung
 P ro S bject d Amp tat fth F earn
 G tell J a d l us f M Arthrot my
 theilq by Modif ti fth Olls P oced
 M ri el P Arth pl t R ect fth Hip
 Milner w J E A Mod ne t fth R t t
 Arthrodes fth K (k n)

Fracture and Dislocations

I zz et R Fract es fth C rpal Scaph d
 M c T ma d th Sp nal C l m
 Curran Tra ma d th p t C l m
 I ndo E Th R t P y t f A ept
 Necro Fract fth Neck fth F m
 I zz I A D g me t fth M sc f
 th h ee J t A Rep t f P d R lt
 St dy f f a s es T t d by Operat

SURGERY OF BLOOD AND LYMPH SYSTEMS

Bl od Ve el
 M A Th mbo d Embol m f m th
 Sta i t fth Cynec log t
 I ndo K A C t b t P r t u
 N dosa
 Bez al A N rot f f r ntis
 D T K C Th D ff t t f O nu d
 f t v scul Oc i
 N re m C Th f d l b a Ope t f
 Pulm ry Embol m
 M L D A H S C J D r x v
 Sm lt eo l g t fth v in L gat f
 th La k At es

Blood Transfusion

M I C Th Effect f A xsth p e th
 H d s g C t f p e m t l l es g
 R A St phyl oc cu Sept arm C ed by
 I t J oc l t with B t ph g

SURGICAL TECHNIQUE

Op tu Surg y ad T chniqu P t p r t e
 Tr tm t
 H C W Th B h f M h l P reserved
 f sc Lata f h O A t g vo F scia d
 Chrom cured k a oo T l D g d
 M
 O ri G L A Cl f d B f g a l C t l t
 T p l a tat
 B ro S C Th Mecha m l l fth
 I g s fth I L ne f D l at P t
 operat Complicat
 K l u H Tra mat f t Embol m

Anastomosis

M y f C Th Effect f Anas hes p e th
 H l oal g x C t I p e m l l est g
 t

K ye G A rw ys
 Jo es W H ba f ad Block
 G y N d Ros S Th T A tuo f
 N oc Sp l A xsthes
 K A M B Th l es t St t f Sod m Amytal
 M L F C ram S C tral Resp rat ry
 P alys M t r t u C r s

PHYSICO-CHEMICAL METHODS IN SURGERY

R e t g n logy
 Mo iz E P r A i L A Art l
 E eph l graphy d It v l m th D gn
 f B T m rs
 G C e J R t g g f b v Bra
 T m rs Jt v l d L mutat W th t
 T mrcul g phy f th phalography
 T u P C Th Tech e f th Roe t g
 Exam t fth Oesophagus
 L a T H d M P f I t
 U g r phy Inf t l Ch l r
 F v F Th R t g P t f t f t
 Nec s I tu fth Neck fth f m
 l W A L L L C L T Th Tre tm t f
 M l t T m fth S l am ted M l
 d f g t M nomat
 T set to P t p e t I d t f t
 om
 Sc v P F rst F p e h th I t
 R t T m f t f C ta d C r c m
 fth f m l C talia

Radium

N e F E P gles d T h i l l ed
 th P e s e t D y T tm nt f Ca f th
 M n C
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MISCELLANEOUS

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 Wood W B 35
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INTERNATIONAL ABSTRACT OF SURGERY

JANUARY, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Ivy, R. H., and Curtis, L. Fractures of the Upper
Jaw and Malar Bone *Ann Surg*, 1931, xciv, 337

Fractures of the maxilla are often associated with extensive fractures of other bones of the head. Displacement is due to the traumatizing force, sometimes influenced by gravity. It is not due to muscle pull. Fractures of the maxilla are classified as (1) fractures of the alveolar process alone, (2) unilateral fractures across the facial aspect above the roots of the teeth and through the hard palate, (3) bilateral horizontal fractures above the palate and below the orbital plates, and (4) extensive comminution and crushing of the upper part of the maxilla complicated by fracture of the nasal and other bones.

Fracture of the alveolar process is caused by the extraction of teeth or a blunt localized force against the teeth. It is characterized by displacement, mobility, and malocclusion, and is frequently accompanied by fractures of teeth or their roots. Removal of detached and fractured teeth and roots is necessary. Fragments exposed by detachment of the soft tissues should also be removed as it is fairly certain that they will undergo necrosis. Remaining teeth in the fragment should be wired in a position of occlusion.

Unilateral fracture of the maxilla is caused by a direct force acting from in front or from one side. As a rule the entire maxillary dental arch is depressed. In some cases it may be forced inward so that overlapping occurs at the palatine suture. Occasionally there is outward displacement with spreading of the arch. The maxillary sinus may be filled with blood clot. The blood clot may be absorbed or may disintegrate without symptoms or may become infected. In many cases the maxilla may be reduced immediately and wired in occlusion. In some cases it may be necessary to correct overlapping by jack-screw force across the palate. Outward displacement may be corrected slowly by transverse or diagonal elastic traction across the arch.

Bilateral horizontal fracture is the result of a direct force acting from in front. Downward and backward displacement of the maxilla as a whole is usual. In some cases there is a longitudinal fracture through the palate. Fixation must be obtained by support from a head apparatus and the reversed Kingsley splint described by Marshall. An emergency splint may be made from a metal impression tray by soldering to each side a heavy wire arm to be brought out from the mouth and turned back on the cheek. The wires are fastened by straps to a plaster skull cap and the tray is secured to the teeth by impression compound. Another apparatus has a heavy arch bar to be wired to the teeth and a similar arrangement for suspension from the skull cap. The average time required for union is six weeks.

Bilateral fracture with extensive comminution results from gunshot wounds or a severe force acting from below. Fracture of the base of the skull is often associated with it. Infection from the nasal fossa and sinuses is common, and meningitis is not infrequent. The first consideration must be the patient's general condition. Reduction should be delayed a few days. Drainage and frequent cleansing irrigation of involved accessory sinuses are indicated. In the fixation of fractures of this type upward pressure by straps attached to the skull cap would produce shortening of the face. Therefore rigid suspension at the proper distance from the skull cap by means of solid vertical bars to the dental splint is necessary to maintain the bones in position.

Fracture of the malar bone may occur with or without fracture of the maxilla or mandible. It is due to direct violence. Fractures occur near the suture lines at the zygomatic arch, the infra-orbital foramen, and the lower border of the orbit, the frontal process, and the maxillary articulation. The body of the malar bone is usually driven into the maxillary sinus and impacted. There is definite flattening of the upper part of the cheek with fullness below. Early swelling masks the depression and frequently causes it to be overlooked. Irregularity on

palpat on bl ding from the nose and subconjunc
tival ecchymosis a cor m n and th re is numbness
of the sk n n the area suppl d by the infra-orbital
nerve. Movement of the jaw may be impa red by
p essur of the depressed bone on th cor noid p oc
ess. Th injury may be limited t fracture of the zy
gomatic arch with d press n of the f gment r sult
i g n n t h r e with mot n of the jaw by pr s
sure f the d pre sed fragment.

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mor difficult ases the method of Gil s Kliner
and Stone i pr ferable. Th r u a curv d inci on
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tected by th ck g u pad at th fulcrum f old
cas t m y be n e sary t cut d wn on th fra
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Tor f a tu es f the zy g mat arch lone M tas
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ope at n m y be n cess ry. E b PLATT M D

H Sner The F rm f O t l l Fibrosa f th
Maxilla (D t r des O t l l ab ova des K e r s)
Z i l b l f Ch 93 p 866

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th bone m r w t n j e The uth
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ma ked destruct Th g i a t e l l s
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g i a t l l s with steocl t th leocl st c
phagocyt f ct n th dem t f m l l f
the ascula walls n th im l nty of the giant

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matory reactio

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t t ut s the t ans tion to the cond form of st... s
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which w re formerly look d upon as fibromata a d
osteofibrom t. At th pr sent time these a e gen
ally incl d d with stetit fibrosa. A boy sixteen
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s de f the lower jaw f f e years. The roe t e o
g m show d polycy t c cha ge. Hist l gical ex
am tion re e led a w e l p reserved c rucal t e
and t o ard the interior a m ture sp d cell t s s e
in which th e was a ne f r m t n t f bo
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t abecule Th h dened bo e t s was p e d
m nant a fact which ex p l n d th m r e t e n s e
a e o d t e a s d n t y sen in the roentg no gram.
Bon destruction was ery slight. O the ob r a
tions in wh ch g t cell foca re found in such
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sh p of the g t ell tumors to th bo f r m ng
fib o s t m o n loca d oste t s s fib oss f t e
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d l p me t w s t l a s t s e n ye rs. H t o l g cal
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auses a e n t k e n and are p bably m m rou
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i r r i t n t). They p o d destruct o f l l ed b y a
d t r b e d r g e r a t n w h c r l l a e c r e a s
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t e f the p o c e s s a n m b e r f y e a r s g g t a
p u s l i m m a t

In th disc u f th po t h o j e r z y t t e d
th t the g i a t e l l s develop th r s h t of an
inflamm t o p o d u c l by an i r r i t n t (p e d n i t u s
r p a d t o s i s) from the m o w t y a l p o e s

the chronic inflammatory resorptive nature of the so-called brown tumors. Central forms of the localized tumor-producing osteitis fibrosa of the maxilla are rare. Konjetzny reported two cases observed for a long time. He stated that the described formations must be considered the basis for a secondary malignant sarcomatous neoplasm even after a very long time.

COENEY said that the tumor-like osteitis fibrosa of the upper jaw affects mainly young girls. He reported five cases. ERNST HEMPEL (Z)

Layman, D. W. Pyogenic Infection of the Parotid Gland. *J. Indiana State M. Ass.*, 1931, xiv, 465

Layman reviews a series of forty-six cases of parotitis, in twenty-four of which the condition developed after an abdominal operation. Eleven cases were fatal. The cases treated by incision and drainage, especially those operated upon early, ran a milder course than the cases which were not treated surgically. Layman discusses the causes of parotitis and concludes that the condition is more frequent than is generally supposed.

ELIZABETH CRANSTON

EYE

Goldenburg, M. A Glaucoma Study. *Am. J. Ophthalm.*, 1931, xiv, 944

On the basis of fourteen cases of various types of glaucoma in which Peterson and his associates made an extensive study of the capillary system, Goldenburg theorizes regarding the cause of glaucoma and the factors involved in increased intra-ocular pressure. From the results of various tests and physical examinations not described or discussed in detail but summarized in tables reprinted from the *Archives of Pathology* the conclusion is drawn that glaucoma is characterized by increased permeability of the capillaries. The author believes that the canal of Schlemm is only a safety valve, and that intra-ocular pressure is regulated largely by the state of the capillaries in the ciliary body. He rejects the theory that a shallow anterior chamber and enlarged lens predispose to the condition, and concludes that "congenital tissue sensitivity in the capillaries, capable of a marked reaction to a stimulus" is a factor of importance.

WILLIAM A. MANN, JR., M.D.

Gradle, H. S. Concerning Simple Glaucoma. *Am. J. Ophthalm.*, 1931, xiv, 936

Gradle discusses the diagnosis and treatment of non congestive glaucoma. The cause of this form is unknown. Early cases may present some difficulty in the diagnosis. In the case of a patient of glaucoma age the development of headache after use of the eyes in the dark, as in the moving picture theater, a history of the disease in an immediate forebear, and digestive disturbances (rare in the simple form) may suggest the condition. Examination may show minute dots of brown pigment on the posterior surface of the cornea with no similar cells floating in the

aqueous, a shallow anterior chamber, and a pupil dilating unduly in moderate shadow.

The diagnosis of glaucoma of this early type requires a study of the central visual acuity, peripheral and central fields, dark adaptation, and intra-ocular tension. The light sense may be tested clinically by comparing it with that of the examiner, using a foot-candle-meter in a dark room. Conditions producing symptoms may be reproduced by the dark-room test of Seidel and the tension taken after one hour in a dark room. In fewer than 50 per cent of cases is there an increase in the tension of from 10 to 30 mm. Hg. If the test is negative, it is meaningless.

In the author's borderline cases the patient is hospitalized for diagnosis. The tension is measured every four hours with the tonometer and compared with a normal tension curve. This is done without the use of miotics unless a definite diagnosis has already been established. The coffee test (giving one or two cups of strong black coffee), the drinking test (giving 1 qt. of water to be swallowed as quickly as possible), and the reading test (reading fine print for forty-five minutes) will often produce an elevation of the tension. The coffee test may cause an elevation of from 15 to 25 mm. Hg, the drinking test, an elevation of from 8 to 15 mm. Hg, and the reading test, an elevation of from 10 to 15 mm. Hg. However, Gradle has seen no results from the drinking test. All of these tests may be negative. A rise of over 6 mm. Hg in the morning tension is indicative of glaucoma.

The normal tension may vary considerably. In some eyes a tension of 24 or 25 mm. Hg may end in blindness whereas in others a tension of from 31 to 38 mm. Hg may be tolerated without visual defect. If all other tests are negative, the author dilates the pupil with ephthalmine. In glaucoma this will always cause a rise in the tension.

Gradle favors hospitalization also of diagnosed cases for study of the behavior under management. In the simple form of glaucoma surgery is never indicated unless pilocarpine, occasionally supplemented by other drugs, cannot hold the disease in check.

WILLIAM A. MANN, JR., M.D.

Learmonth, J. R., Lillie, W. I., and Kernohan, J. W. Unusual Surgical Lesions Affecting the Optic Nerves and Chiasm. *Am. J. Ophthalm.*, 1931, xiv, 738

The authors report six cases in which ophthalmological disturbances were associated with a brain tumor of an unusual type or in an unusual situation. They discuss the clinical and surgical features of each case and the findings at autopsy in two cases.

In the first case the ophthalmological syndrome was that of a lesion just anterior to the chiasm, situated mesially, and affecting the nasal fibers of the optic nerve. To this location must be attributed the unilateral temporal hemianopsia with loss of central fixation. In the estimation of the size of the base of the lesion the roentgenogram was of aid. Preserva-

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SAMUEL A. DURR, M.D.

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SAMUEL A. DUNN, M.D.

NOSE AND SINUSES

II ven F Z Prim ry T berculosi f th Nasal
M co s M mbran 4 k Oil j g l 93

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T l f th f stee case c e th e of m les
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The tumors were usually coarsely nodular or of a more finely granular appearance, variable in size, and firm. Some of them were pedunculated. They were a pale gray, bluish-red, or dark brown. The darker color was apparently due to congestion and hemorrhage. Microscopic examination showed all of them to be characterized by numerous undoubted plasma cells which usually showed considerable variation in size and shape and often showed cells with two nuclei. Not infrequently, plasma giant cells with more than two nuclei were seen. The nuclei were usually round or oval and showed radially arranged masses of chromatin. In one case multinucleated giant cells of the Langhans type were seen. Degenerated cells were noted only once or twice. Necrosis was seen once. In some cases capillaries were abundant, while in others plasma-cell groups were particularly numerous about the vessels. The interstitial connective tissue formed a delicate reticulum in which the plasma cells were numerous. In some cases lymphocytes were numerous. Mitotic figures and eosinophiles were rare. Polymorphonuclear neutrophilic leukocytes were seen in both cases, but in one were present in only the covering mucosa.

There are two main theories concerning the origin of plasma cells. According to one, these cells are derived from lymphocytes. According to the other, they develop from the fibroblasts of the adventitia of the blood vessels. The first theory is more generally accepted than the second. Of the plasmocytomata, some have been regarded as benign, others as malignant, and others as of inflammatory origin.

The authors believe that many of the growths diagnosed clinically as nasal polyps, if studied microscopically, would show a predominant plasma-cell structure. Such neoplasms may accompany syphilitic, tuberculous, or other chronic inflammatory processes. In many instances they are benign. It is probable that those in which malignant characteristics are noted are multiple myelomata rather than plasmocytomata.

E. S. PLATT, M.D.

NECK

Taddei, A. Suppurated Lymphangioma of the Neck with Histologically Demonstrated Primary Fat (Linfoangioma suppurato del collo con reperto istologico di grasso primario). *Rassegna internazionale di clinica e terapia*, 1931, xii, 721.

Lymphangioma of the neck is a rather rare condition and the case reported by the author was particularly unusual because the tumor consisted of lobules of primary fat. Taddei has found no similar case in the literature. The patient was a female child four months and ten days old who was born normally after a normal pregnancy. At birth, she presented a tumor the size of a hen's egg on the right side of the neck. The neoplasm extended down to the supraclavicular fossa and up to the lower border of the jaw. It did not pulsate and did not cause pain. The physician who was consulted made a diagnosis of lipoma and advised expectant treatment. The tu-

mor gradually decreased to the size of a nut, but it then suddenly became larger and pain and fever developed.

Exploratory puncture yielded pus containing the staphylococcus albus. Except for the tumor, the child was normal. The diagnosis was congenital cystic lymphangioma of the neck with suppuration of a cystic cavity within the neoplasm. A block of the tumor tissue was removed and the underlying pus cavity drained. The author says that it is almost always impossible to remove these tumors radically. In addition to many small cysts, the neoplasm contained lobules of fatty tissue.

When the child was seen five months later, the tumor was very much smaller and was covered by normal skin.

AUDREY GOSS MORGAN, M.D.

Frazier, C. H. Carbohydrate Metabolism in Relation to Postoperative Crises in Hyperthyroidism. *Am J M Sc*, 1931, clxxxii, 378.

Frazier cites a number of investigations of the carbohydrate metabolism in thyroid disease which demonstrated that a disturbance occurs chiefly in the glycogen storage in the liver. He presents three glucose tolerance charts made before and after thyroidectomy which show no significant difference. He concludes that the intravenous administration of glucose in dilute solution is of value in postoperative thyroid crises. In support of his conclusion he cites two cases of such crises in which this treatment was apparently beneficial.

PAUL STARR, M.D.

Lahey, F. H. The Surgical Management of Intrathoracic Goiter. *Surg, Gynec & Obst*, 1931, lxi, 346.

Intrathoracic goiters usually have their origin in a low-lying adenoma which is forced into the mediastinum during swallowing, gradually elongates, and becomes a complete intrathoracic goiter if its upper pole is below the sternal notch and an incomplete intrathoracic goiter if its upper pole is above the jugulum. Multiple adenomatous goiters of the endemic type become intrathoracic by pushing downward one or both lower poles.

Intrathoracic goiter is characterized by symptoms of tracheal compression, stridor, nocturnal attacks of severe dyspnea, distention of the veins of the neck and head, dullness of the jugulum on percussion, lateral rotation of the thyroid cartilage, and X-ray evidence of an intrathoracic tumor with lateral rotation of the trachea.

In the surgical treatment of intrathoracic goiter it is important to remove the goiter completely as remnants may become necrotic and cause a fatal mediastinitis.

The first step of the operation is the ligation of the superior thyroid vessels. The tumor is then gently pulled forward with one finger inserted behind it and the middle thyroid veins are exposed and ligated. The finger then gently frees the tumor from the surrounding tissue in the rear along a line of

cl a re w th care to vo d j ry to the pl u and the th racic duct. The tum r is the d l ered by ge tl pushing from bel w th gh th ppe tho racic aperture. If it enlarges tra s ers ly so th t de lacy becomes d ficult it may b pull d gradually and gently from abov ith hooks whil the fi g r pushes from belo

When nitro s d nrsth a s u s d pres e n the trache d ng the procedu e m v be o r come by p es g the o vgen bag d wh n ether anes thes is used it may be r l v d by pa ing a st ff cath ter through th ocal cords

After d lvery of the tumor a warm m st trnp of gauz is introduced to the c rty until the blood supply of the pedicle of the go t r s lig t d. After the ligat n has be n d r it is remo ed the ca tr exposed and oo n co trolled. Fi eo six trips f gauze ar th n i t o d ced to th ca rty. The dra nag is m ntai ed f about th w ks until the avity h s ll psed a d become filled w th granulat f m bel F S Moore MD

King B T Th Cause f F phth l m ll //
F S g Ob f & Gy 93 xx 60

The auth r repo ts h s imp ess ons f e ophthal mos as b r v d m g r s oop patients pe t d upo for gote in the l t se e ye rs l about half f the cases fual diagnos d f f use hyperl a of th thryo d was ma and in m re than h lf f the latter e ophthalmos of rying degt was p sent. All of the local phe me that occur in soria t a w th th x pthlalm s may be pla ed n the ba s of myatons and circ latory ch nges n th ocular m scles nd the ch t al c ty. W th th cept n f ced m the loc l h nes bear a const t elatons h p to m l r ch g s in the th parts f th body. Th auth bele s that f the cause f th t a o b l t a edema l d b e pl d th ca se of the phth lmos w l d b b ious

E cept c ses f solid t m s within th o bital ca rty phth lmos is p odu ced by hyd static pres u. Th deg f e phth lmos es th am t of ed m d th amo nt of ng ge m nt of the o l l l e

Th auth b l that wh n th c l t a greatly a cel rat l blood p mped t th or t l ca rty mo e raj ll th t ca be d lve a uated by the e l ng th l t th h tr t g bony c m m s a d f r m na d th t th re d l ng end m d m l v to mech m al ter f reace w th th t u l t a l l tes u theor s as t th c uses l phth l m s d d cusses th m b r f h H bels es th t l t e f exo phth lalm d u eq l phth lmos the sam person a e pla d b e rabi a t u o n the size of the bon pe t es th gh wh h th ve s pass

When ex ordem pe t f l g t m new co nect e tuss s def n ted. Th th beleves that in l g t n g ases th f t d th h r e m g e Te o s rap le e pl pers te t post operat e e ophthalmos C G S MD

Th mpson W O and Thompson P K Exoph th lmic Golt Th De lopment f R fra t riness to lodl t A l t M d 93t x l u 351

The th r s r po t the case of fi e p t nts w th exo phth lmic go t h became refract ry to od ne during the co tinu adminstrat n f the d u g O pati nt afte sh wang r mission became r fract t 6 mgm daily a d ficient at th r t mes to produce maximum red t n n the b sal m tabolism. The l x r others bec me t l ast part llj r l ctory dur g th prol ged dm n trat n o f f r m b to s mgm daily l a l r ase the ref ctors n ss disappeared. Iter i dne wa om tted. O e pati nt p rat d upon wh n the metabolism as r ng rap dly d ring the conti u s adminstrat n f dne died bout forty hours. After th operation from a po top t ve criss l tw p t l e e phth lmos was first noted the rate of metabolism as r s g d ng th conti uous use of small dos s of ioda nd tw it b came m re m a k d under th e circumstances

The authors draw the f ll w g con l ons
In se e case of exophthalm go t r pera t on should b p r f rmed soon th metabolism ach s a lev l during the dm nstrat n of ioda e as the be f l al effe t l iodine m v be brief

If peration s lightly d layed d th rate f metabolism sta ts t use rap dly soon aft r the nital dr p pe t u h uld not be performed until od ne h s been om t d for a short t m as a sh rt pe od of m uss n f s d may c use the refr c tor ess to d sappe and m ke th pati nt better op rat r k Walter H. Nao r MD

D nhill T P Ca cl m of th Thyroid G l nd B J S t 93 85

It has been st t d that ca m of th thryo d has f atu es wh h a e o k n to ocu n m a l gna t disease any othe org. It h been as se ted that benign t m of th thryo d en a rmal gl d m j g n e s e t m t a. It is now g n rally agreed that the seco d ry gr w th may e produ me f th m rph log l h r a t s t c s of th prim ry growth b t t h be n t ted th t the m t a tas f th y d malig y may h dis t t g u h ble from rmal gl d t s s. A m l g t growth h d d h a e n phy l t t y j e t m t t s e s f m m l g nant th r l m j u t t t ext t de quat t the nee l s f th body even fier t p t o f the p t g l nd

The a th l l f e c m t f the thyr d int () scirr h ca n m t () p pull f rous d oc re m t a nd (3) m l g t denom t. If st tes that a dgnos b sel n t thook de script o s u too t l t be f b e fit t the p t ent. The d f fult s the ly diagn a s d t the fact th t th the pl f th scirr h type f l e s n c m r a ly se a m a l g l a d t almost lways ocu n g a d wh h l l ady d s e a s d l wh h th p the m lth gh be g m y h w e t r m l y d r e s t r ture

The findings in the author's cases and the conclusions drawn from them are summarized as follows

1 In our cases there are three types of cancer of the thyroid: scirrhous carcinoma, papilliferous adenocarcinoma, and malignant adenoma

2 The scirrhous carcinoma in the thyroid does not differ from the same lesion occurring elsewhere in the body

3 In the thyroid gland, epithelial proliferation is the characteristic response to stimulation. The proliferation may resolve spontaneously or under treatment, it may form a benign tumor or a tumor which invades and disseminates. These stages merge into one another gradually. The histological gradations cause difficulty in deciding when a tumor has become malignant

4 Proliferation of thyroid epithelium may be papilliferous or follicular in type. Papilliferous adenocarcinoma may be the ultimate result of the former type and malignant adenoma the result of the latter type

5 It has been suggested that the cause of carcinoma is stimulation which may be normal and affecting tissue that is subefficient or so excessive as to amount to irritation

6 Although in cases of carcinoma of the thyroid a specific glandular structure is frequently found in both the parent growth and the metastases, the essential character of the disease conforms to the laws followed by carcinoma of other glandular organs and its cause is possibly the reaction of the glandular epithelium to irritation as in carcinoma of the breast

7 A nodule in a thyroid gland should not be treated as of no importance. Early changes in the signs and symptoms associated with it should induce the practitioner to investigate the cause of the changes

8 Histological examination should be made in every case in which thyroid tissue is removed. Sections should be taken from different areas

9 Advanced cases of carcinoma of the thyroid should not be regarded as hopeless. When the patient's condition justifies it, as much of the tumor should be removed as possible and X-ray treatment then given. By this means the patient is rendered more comfortable and life is sometimes prolonged to a surprising extent. R. V. B. SMYER, M.D.

Goetsch, E. Mortality in Goiter Operations. *Ann Surg*, 1931, xciv, 167

The author reviews 22 deaths occurring in 1,755 surgically treated cases of goiter

The type of operation was not responsible to any extent as fatalities followed simple ligation as well as partial resection

Eight (36 per cent) of the deaths were caused by postoperative hyperthyroidism and secondary cardiac failure. The author emphasizes that the pre-operative use of iodine will not always prevent a severe postoperative reaction

Four of the deaths reviewed were due to primary cardiac failure in patients with long-standing thyroid disease which had caused severe injury to the heart. Goetsch believes that these patients would have died even if they had not been subjected to surgery

In 3 cases with a history of cardiorespiratory trouble such as tuberculosis, chronic bronchitis, arteriosclerosis, and bronchopneumonia death was due to pneumonia. The goiter was not of the severe hyperthyroid type

In 3 cases embolism was responsible for the death. In 2 of these, only unilateral ligation was done. The extent of the operation did not seem to be a factor. In all 3 cases there was severe cardiac damage. The deaths occurred on the ninth, tenth, and eleventh days after the operation

One patient died from tetany during a severe attack on the eleventh day after 2 minor attacks had been controlled by parathormone and calcium

In 1 case death resulted from tracheal obstruction and edema of the larynx on the third day in spite of immediate tracheotomy. A large adenomatous goiter of twelve years' duration had so softened the tracheal rings that collapse occurred

One death followed the intravenous use of an improper dextrose solution. Today the danger of such an accident is slight on account of the availability of chemically pure dextrose with buffer salts to preserve the hydrogen-ion concentration of the solution

In 1 case death followed a streptococcal infection of the wound which developed forty-eight hours after the operation and might have been controlled if it had been treated sooner

In conclusion the author says that iodine should be given only in pre-operative treatment and a careful study of the cardiac reserve should always be made. Operation is contra-indicated in the presence of even a slight pulmonary infection and in cases with asthenia and extreme loss of weight

WILLIAM J. PICKETT, M.D.

Childrey, J. H., and Parker, H. L. Myoclonic Movements of the Larynx and Pharynx. A Manifestation of Epidemic Encephalitis. *Arch Otolaryngol*, 1931, xiv, 139

Rhythmic involuntary jerking movements in the laryngeal and pharyngeal muscles are relatively rare. In all of the four cases reported by the authors essentially the same phenomenon, namely, myoclonic movements of the laryngeal and pharyngeal musculature, was presented. Careful examination of the affected organs was made in each case by direct inspection and endoscopy

Myoclonic movements being common in epidemic encephalitis and rare in other diseases, the possibility of epidemic encephalitis was first considered. As no other known disease of the central or peripheral nervous system is capable of producing such a variety of symptoms as epidemic encephalitis, there is ample possibility of error in including all sorts of strange and unfamiliar symptoms in the syndrome

If the latter condition. Accordingly certain criteria must be established and a reasonably comprehensive differential diagnosis kept in mind. The criteria might include the presence of the Jackson syn-
drome and the history of an unusual infection without previous injury of the cranial nerves.

Difficulty in the cognition of the minor manifestation of epidemic cephalitis may be detected finally that the evidence is confirmed by the disease.

Epidemic encephalitis may produce paralytic phenomena with suspension of movement or kinetic phenomena with exaggeration of movement. In any part of the musculature of the body controlled by the nervous system. There may be a combination of paralysis and motor phenomena. The movements may occur throughout the body and involve many muscles or may be localized to a small area as in the four cases reported by the authors. Disorders of movement in epidemic encephalitis may be divided into general and local convulsions characterized by dystonic spasms or rhythmic and complex movement.

In myoclonus the jerking is sudden quick and quick like that produced in a muscle by a transient electric shock. The muscles relax as quickly but again contract rapidly. The resulting continuous twitching varies in speed in different cases.

The jerking may become general and involve most of the voluntary muscles of the body. This was more common in the early years of the epidemic. The cause is not that the muscles are characterized by an acute twitching response in the trunk and extremities at first local but later becoming generalized. The pains were soon followed by muscular jerks, waves and twitchings which were rhythmic and persisted for weeks or months. Apart from these generalized motor disturbances occurring in the epidemic and also during the inter-epidemic periods, a series have been observed in which the jerking was not so widespread and were more chronic. The abdominal muscles are particularly vulnerable and may be entirely rigid initially. The legs, arms and legs on one side may be affected. Still more local than jerking may involve a single limb, a group of muscles or a muscle or even a segment of muscle. They may change from one part to another and different groups of muscles may be involved in the same as at different rates of jerking.

Association of these myoclonic movement with some other symptoms of epidemic encephalitis has been helpful in establishing the diagnosis. The first cases reported by the authors presented the Parkinson syndrome which has been recognized as highly suggestive of epidemic encephalitis.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS, CRANIAL NERVES

Rand, C W, and Courville, C B. Histological Studies of the Brain in Cases of Fatal Injury to the Head. II Changes in the Choroid Plexus and Ependyma. *Arch Surg*, 1931, **LXXXIII**, 357

The authors report studies undertaken to determine the cause and source of the increase in the cerebrospinal fluid following trauma to the head and its relation to the late posttraumatic symptoms and death. In sixty-one cases of fatal injury to the head, most of which had been under their clinical observation, they made microscopic studies of the choroid plexus and ependyma and compared the findings with those made in the same tissues of ten persons who had died from conditions not involving the central nervous system. In nearly all of the cases of head injury there was intracranial hemorrhage of some degree. The earliest deaths were almost instantaneous. The latest death occurred after nineteen days. The authors report each case in detail and include in their article several photomicrographs of the choroid plexus and ependyma. The findings and conclusions are summarized as follows:

1. Following fatal injury to the head, increased vacuolization of the choroidal epithelium with heightening of the individual cells is usually found. This may occur in the form of large single circumscribed vacuoles or as numerous small droplets suggesting cellular oedema. The changes vary within wide limits, begin immediately, and apparently reach their maximum in from two to four hours after the injury. Other factors, such as shock, the time interval between the injury and death, and the use of hypertonic dextrose solution undoubtedly influence the ultimate picture. It may be assumed that similar changes occur in non fatal cases.

2. Oedema of the stroma of variable degree occurs under these circumstances. This probably precedes the changes in the epithelial cells. Occasionally hemorrhagic extravasations are found, but more frequently the stroma and epithelial vacuoles contain pigment which may indicate disintegration of red blood cells. The pigment is probably hematoidin.

3. Subependymal oedema and an increase in the vacuolization and height of the ependymal cells often occur. These changes are variable and not so constant as those in the choroid plexus.

4. The changes are similar to those found in the water brain of animals produced experimentally by the intravenous injection of hypotonic solutions.

5. Whether the changes observed are due to selective activity of the epithelial cells or are secondary to vasomotor phenomena is as yet undetermined.

ALBERT S CRAWFORD, M D

Drury, D W. Aural Acuity and Brain Lesions. I. Audiometric Studies. *Ann Otol, Rhinol & Laryngol*, 1931, **XL**, 682

With the purpose of working out more accurate aids to the early diagnosis of brain tumor, Drury is making a careful investigation of the changes in aural acuity in a large variety of conditions. He examines each patient with an aural speculum, an audiometer, and an electrical bone-conduction receiver. The audiometer and bone-conduction receiver are very sensitive electrical apparatus devised to eliminate the error in the older tests of air and bone conduction of sound vibrations. To date, Drury has studied 291 cases under treatment by Cushing.

The conditions are classified as frontal, pituitary, parietal, temporal, occipital, acoustic, cerebral, and cerebellar tumors, arachnoiditis, and multiple sclerosis, and a miscellaneous group of conditions which include spinal tumors, tic, tuberculosis of the skull, labyrinthitis, epilepsy, and Paget's disease.

The test of aural acuity was made and recorded on co ordinate paper in the usual manner in terms of the double vibrations of the sound per second. The curves obtained show a striking uniformity for the type and location of the tumor and suggest that careful audiometric study may prove of aid in diagnosis and localization. A striking feature was failure of the patient to report deafness when deafness was demonstrated by means of the audiometer. This is explained by the fact that Drury is able to detect deafness to tones above those of ordinary speech which ordinarily passes unnoticed.

ALBERT S CRAWFORD, M D

Moniz, E, Pinto, A, and Lima, A. Arterial Encephalography and Its Value in the Diagnosis of Brain Tumors. *Surg, Gynec & Obst*, 1931, **LXXI**, 155

The authors describe arterial encephalography and report cases to show its value in the diagnosis of tumors of the brain. The contra-indications are the presence of sclerosis of the brain arteries and a previous arterial encephalographic examination. The procedure should not be repeated.

To prevent epileptic attacks following the injection, the authors give 30 ctgm of luminal the night before and early on the day of the examination. The examination is made with the patient in the classical position required for ligation of the carotid artery. Under local anesthesia, an incision is begun at the external border of the sternocleidomastoid muscle on a level with the mandibular angle and extended down to the fold that separates the submaxillary region from the neck. The internal carotid is located through the common carotid, its

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B B D i s e s e s f t h C l i m (t b e C h i a s
m k l) y d i t j d h G e k
193 i 63j

W h e r w t h p h t l m l g c a l p h n o m e n
w h c h m o c c r u c h i a m i s e
S p e c i a l t t t p a l t d t l n e s o f t h l
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A s d f m t r m t l e s f t h b i a m
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matory processes. The characteristic chiasma disturbances are seen in cases of intrasellar hypophyseal tumors. Adenoma of the anterior lobe, especially, gives rise very early to bitemporal hemianopsia. According to Triquier, the upper temporal quadrant of the visual field is the first to disappear, next, the lower temporal quadrant, and then the inferior nasal quadrant. Finally only the upper nasal quadrant persists. This sequence often occurs, but no doubt there are exceptions. A bitemporal achromatopsia frequently precedes the bitemporal hemianopsia. Moreover, most adenomata develop in front of the chiasma. Therefore the ocular nerves may be compressed so that a monocular temporal hemianopsia develops, which later becomes bitemporal. Blindness in one eye may precede disturbance of the field of vision in the other eye. It is not unusual to find scotomata, especially central scotomata. These may occur also in quadrant form. Under such conditions atrophy of the optic nerve gradually sets in. This is often manifested most distinctly on the temporal side and begins with a decrease in vision. Choked disk is extremely rare in purely intrasellar diseases. On the other hand it occurs frequently with tumors of the craniopharyngeal pouch. These tumors can expand within as well as above the sella and thus give rise to greater variation in visual field defects: binasal hemianopsia, homonymous hemianopsia, and bitemporal hemianopsia. With cyst formation, visual acuity and defects of the visual field may present great variations.

In gliomata of the chiasma, also, there is a tendency toward defects in the temporal halves of the visual field. These frequently show bizarre forms as the gliomata often extend in an irregular manner anteriorly into the ocular nerves. In such cases the papilla is usually atrophied, but occasionally it is prominent.

In cases of suprasellar meningioma the function of one eye generally suffers first and there is blindness in one eye with hemianopsia in the other. Choked disk never occurs in this condition, but atrophy of the optic nerve is found.

Chiasma syndromes may be caused also by tumors of the frontal lobe or by secondary dilatation of the third ventricle. The greatly dilated third ventricle can close in on the chiasma and thereby exert pressure on the lateral parts and cause a binasal hemianopsia. Another explanation is that the nerves of the eye are pressed against the arteries of the *circulus arteriosus Willisii*.

Chiasma disturbances from thromboses and hæmorrhages in the circulatory area of the chiasma have been described by Hensche and Zeeman. Of greater importance are aneurisms of surrounding vessels. The majority of cases of binasal hemianopsia are caused by pressure from aneurisms. The diagnosis is often difficult.

In retrobulbar neuritis of the chiasma, bitemporal hemianopsia with various other combinations of visual field defects is often found in addition to

other phenomena such as choked disk and optic neuritis. Abscess formation in the chiasma is rare; it has been described by Bakker. In Bakker's case only the left uncrossed fibers were spared.

Of the chronic inflammatory processes, the most important are the syphilitic and the tuberculous. Oppenheim regards hemianopsia bitemporalis fuga as characteristic of basal syphilis. Not only bitemporal hemianopsia, but also nasal or binasal hemianopsia, hemianopsia superior, and other defects in the visual field may be encountered in basilar gummatous meningitis. Choked disk is a fairly frequent finding.

Finally, the author discusses circumscribed arachnoiditis, which may be localized in the cisterna chiasmatis, and reminds us that chiasma syndromes have been observed occasionally with *tabes dorsalis*, multiple sclerosis, and leprosy. ROELOFS (O)

SPINAL CORD AND ITS COVERINGS

Towne, E. B., and Reichert, F. L. Compression of the Lumbosacral Roots of the Spinal Cord by Thickened Ligamenta Flava. *Ann Surg*, 1931, vol., 327

The authors report two cases of compression of the lumbosacral roots of the spinal cord by thickened ligamenta flava. In the first case, that of a laborer fifty-three years of age, there was a history of pain in the right lumbar and sacral regions which began six weeks previous to the time of examination, soon extended down the back of the right thigh and leg, was made worse by motion and relieved by rest, and gradually increased in intensity. Soon after the onset of the pain the patient noticed progressive weakness and numbness of the right leg. For a week before his admission to the hospital the pain was quite severe and the weakness so marked that walking required the use of a cane. At the time of his admission all of the muscles of the right thigh and leg showed occasional fibrillary twitching, muscle tone was decreased, and there was evidence of considerable atrophy. Within two weeks practically all motion of the right leg was lost. Sensation became diminished and in places almost totally lost over the distribution of the third lumbar to the second sacral segments, inclusive, on the right side. The motor and sensory changes did not involve the left side.

Roentgenograms of the lumbosacral spine showed hypertrophic osteoarthritis and six lumbar vertebræ. Wassermann tests of the spinal fluid and blood were negative. The spinal fluid was xanthochromic. Lipiodol introduced into the subarachnoid space at the cisterna magna was held up above the lower margin of the body of the second lumbar vertebra. It did not pass this point in twenty-four hours. A convexity in the lower margin of the lipiodol seen in the posterior projection led to a diagnosis of possible extradural tumor.

Operation disclosed a block due to a band of tissue about 8 mm. thick which crossed the dura between the laminae of the second and third lumbar vertebræ.

origin of the clot de loped from the cl sical exper m ts f Bord t W dal nd th rswth egard to n ph l s

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HEART AND PERICARDIUM

Beck C S Th S r gical t m t f P ricard i l
Sca J m J l 93 84

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pericardium should not be attempted unless the patient has a certain circulatory reserve. The author believes that the negative chamber should be used in all operations on the heart and pericardium.

C. G. SHAFER, M.D.

ÆSOPHAGUS AND MEDIASTINUM

Talini, P. C. The Technique of the Roentgen Examination of the Æsophagus (Particolarita di tecnica di rilievo radiologici nel carcinoma esofageo) *Rad. ol. med.*, 1931, VIII, 1183.

Talini describes the methods used by him in the roentgen study of about 100 cases of cancer of the Æsophagus. He prefers the method of total filling which he thinks has many advantages over the methods commonly employed. It eliminates false images due to incomplete filling; it shows the extent of the involvement definitely, and it allows the progress of the disease to be followed by means of roentgenograms. Total filling is obtained partly by a slowing up of the ingested meal and partly by a reflux from the cardia. The patient is examined on a fluoroscopic table with the pelvis slightly elevated.

The roentgenographic demonstration of the mucosa with a thin barium paste is of especial aid when one desires to verify the integrity of the inner wall of the Æsophagus in cases of submucous infiltration. In cases in which other methods of examination cannot be employed the use of a mixture of barium in water and oxygenated water is of value. This method defines exactly the segment of the Æsophagus infiltrated by cancer as the substenotic portion of the Æsophagus is slightly distended by the gas and brought into relief by the opaque barium on the walls.

The author describes the functional picture produced by cancer of the Æsophagus (pharyngo-Æsophageal paresis) and the organic changes found in the examination of a large number of cases.

In conclusion he reports 2 unusual complications of Æsophageal cancer: (1) a perforation into the mediastinum and the upper lobe of the right lung with the co-existence of 2 independent tumors, and (2) a neoplastic diverticulum in the right lobe of the thyroid in a case of cancer of the upper portion of the Æsophagus.

EUGENE T. LEDDY, M.D.

Mosher, H. P. Hæmorrhage into the Æsophagus at Birth and in the Adult. *Laryngoscope*, 1931, XL, 591.

Mosher studied the Æsophagus of twenty still-born infants, two infants born alive, and forty-three adults. His findings and conclusions are summarized as follows:

1. The Æsophagus may be infected before birth.
2. Pericæsoophageal hæmorrhage was found in premature babies born dead.
3. In babies dying from hæmorrhagic disease of the newborn, pericæsoophageal hæmorrhage and sub-epithelial hæmorrhage in the Æsophagus and the stomach were found.

4. Extensive intramuscular and pericæsoophageal hæmorrhage was found in a baby which lived thirty-six hours and died of intracranial hæmorrhage, in a baby whose mother had toxæmia of pregnancy, and in a baby which was born with congenital syphilis and died of sepsis from ulcerative tonsillitis and pharyngitis.

5. The hæmorrhages were found to come from the smallest of the capillaries.

6. The hæmorrhage in babies dead at birth is probably due to prebirth toxæmia.

7. Hæmorrhagic disease of the newborn is probably due to prebirth toxæmia.

8. Infection of the gall bladder is often associated with infection of the terminal portion of the Æsophagus. By causing adhesions, it may produce cardiospasm. Very extensive intramuscular and pericæsoophageal hæmorrhage has been found associated with acute cholecystitis and jaundice.

9. Narrowing of the crural opening and constriction of the Æsophagus have been found associated with fibrosis of the fascial edge of the crura.

10. Pericæsoophageal and intra-Æsophageal hæmorrhage were found in two adults. In one, they were associated with acute infection (cholecystitis) and in the other with chronic infection (multiple lung abscess).

ALTON OCHSNER, M.D.

Smerd, L. F. Spontaneous Rupture of the Æsophagus. *In J. Surg.*, 1931, VII, 497.

A man who had had a duodenal ulcer for ten years and a stricture of the lower Æsophagus was suddenly taken with a severe attack of vomiting and experienced a very sharp pain in the epigastrium and left lower thorax. After this attack the pain in the chest persisted, breathing became labored, and he was unable to take fluids by mouth or to clear mucus from his throat. The breath sounds were decreased throughout the left chest and fluid dullness was noted in the left chest posteriorly.

At autopsy, the stomach was found greatly dilated, the pylorus stenosed, and a loop of ileum twisted and gangrenous. The left lung was collapsed and the pleural cavity filled with a thin brown fluid with a fecal odor. Five centimeters above the diaphragm there was a stricture of the Æsophagus with an internal diameter of 4 mm. and between the stricture and the diaphragm a complete rupture of the Æsophagus 2 cm. long which connected the lumen of the Æsophagus with the mediastinum and the left pleural cavity.

This case and cases reported in the literature show that rupture of the Æsophagus may follow severe vomiting. The author states that it may result from the prolonged vomiting of pregnancy, but more often is associated with an Æsophageal abnormality. It can occur only when the stomach is full.

Thoracic pain, dyspnoea, cyanosis, emphysema of the neck, and physical signs in the chest following vomiting should suggest the condition. If the rupture takes place into the pleura, thoracotomy is imperative.

GEORGE A. COLLETT, M.D.

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ALB F D G M D

HEART AND PERICARDIUM

Beck G S The S r g i c a l T m t f P r i c a d i l
Sc J Am V 4 93 84

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impossible to determine the origin or nature of the tumor or its relation to neighboring organs. The mere diagnosis of the presence of a mediastinal tumor is inadequate. For the selection of the method and route of intervention more must be known. Therefore a preliminary exploratory thoracotomy is frequently necessary. The benignancy or malignancy of a tumor cannot always be determined from its pathological structure. Also for the irradiation of inflammatory and malignant neoplasms, a knowledge of the structure of the tumors is necessary. Therefore exploratory thoracotomy and biopsy are required. In cases of malignant tumor of the mediastinum which cannot be removed by radical operation median division of the sternum gives considerable relief and prolongs life by enlarging the thoracic cavity. The compression of the vessels and the air passages is overcome and dyspnoea and cyanosis are relieved. Even very sick patients withstand the operation. The operation is of value also to relieve pressure symptoms from marked dilatation of the aorta. In cases of benign tumors which may endanger life by pressure and space encroachment, even small tumors near the heart, the outcome of operative treatment is more favorable.

The author reports the cases of two patients who died suddenly, one while climbing stairs and one while lifting. In one, a benign fibrolipoma over the first auricle, and in the other, a mediastinal cyst compressing the heart was found. In both cases death was due to pressure upon the nerve and muscular centers of the heart.

Benign tumors in the anterior portion of the mediastinum occasionally produce severe neuralgias by pressure upon the plexus. Common tumors of this type are retrosternal and mediastinal goiters. The former lie with the lower pole of the thyroid in the mediastinal space and cause compression of the trachea and obstruction to the return venous flow. Mediastinal goiters have no connection with the normal or enlarged thyroid. They either originate independently in the mediastinal space or become detached later. Retrosternal goiters are removed from above. Sometimes division of the sternum is necessary. In mediastinal goiter a wide exposure of the mediastinal space is obtained by longitudinal splitting of the sternum. The removal of fibromata and lipomata is possible.

Ganglioneuroma takes its origin from the sympathetic, lies in the posterior mediastinal space, and may become very large. The author has operated successfully in five cases.

Operative removal of dermoid cysts of the mediastinum is now done in one stage. Formerly, it was performed by opening the sac and tamponing. Inflammation of the mediastinum frequently ensued. The procedure was particularly dangerous when the pleural cavities were free. Total extirpation is not without danger because of the relations and adhesions of the sac to the heart and large veins. Wide exposure, careful hemostasis, and primary airtight closure of the chest cavity are necessary.

Mediastinal cysts are characteristically rounded structures which appear sharply circumscribed in the roentgenogram and are usually located in the anterior mediastinum. They often force themselves between the heart and the hilum of the lung, pushing the heart toward one side or the other. Their size varies from that of a plum to that of a child's head. Their walls are lined by cuboidal or cylindrical epithelium. They contain clear fluid which is rich in albumin. They often show numerous cavities separated by connective tissue septa. Their origin is obscure. Some of them arise from early strangulations of the bronchial tree during the fetal period. They represent the grossest form of an obstruction formation which sometimes leads to bronchiectases. The cysts which appear as anomalous pouchings from the oesophagus or left trachea have a different genesis. They are less common and never so large. Mediastinal cysts resemble large echinococcus cysts and dermoid cysts in their practical importance, that is, they produce suffocation, dyspnoea, and cyanosis. When mediastinal cysts reach the pleural cavity and compress the lung, they are usually not recognized and are mistaken for empyema. Following sore throat or grippe, there may be secondary infection of the cyst sac with high fever, absolute dullness, compression of the lungs, and pus as in empyema. After rib resection, the residual cavity does not disappear. The author reports the cases of four patients with such residual empyema cavities in which rib resection and a plastic operation had failed, but after extirpation of the sac, healing occurred without fistulae.

The author reviews the cases of a number of patients with mediastinal conditions. The first patient had a spontaneous pneumothorax with overdistention and displacement of the mediastinum and its organs. Puncture was done to relieve the pressure. The second had a substernal goiter, and the third a malignant substernal goiter which caused severe dyspnoea. In the case of the third patient the sternum was divided and X-ray therapy was given. The fourth patient had a mediastinal goiter not connected to the thyroid. The tumor was removed after longitudinal mediastinotomy. The fifth had a mediastinal cyst, which was removed through a collar incision with division of the sternum to the third rib. The sixth patient had a congenital cyst of the mediastinum the size of a child's head, and the seventh a mediastinal dermoid cyst, which was removed from the right lower mediastinum. The eighth had a dermoid cyst, which was removed from the left upper mediastinum. The tumor could not be completely freed. After wide opening of the left pleural cavity the sac was separated from the pericardium and the innominate vein with difficulty. The second rib had undergone erosion, which is very rare in cases of benign tumor. The ninth patient had a ganglioneuroma, and the tenth a mediastinal fibroma, a fist-sized lipoma in the posterior mediastinum. The eleventh patient was suffering from lymphogranulomatosis, and because of the danger of suffocation it

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SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Pistocchi, G. Incapsulating Peritonitis (Peritoniti incapsulanti) *Arch ital di chir*, 1931, **LXI**, 557

Pistocchi reports two cases of an unusual form of encapsulating peritonitis. The first was that of a twenty-five-year-old woman who, about a year prior to her admission to the clinic, had an attack of abdominal pain associated with distention. This gradually subsided but about a month before her admission it recurred. Whereas in the first attack the pain had been felt throughout the abdomen, in the second it was localized in the left lower quadrant where the gradual appearance of a mass had been noted. The patient suffered also from nausea, vomiting, and constipation and finally developed the characteristic symptoms of acute intestinal obstruction.

Physical examination of the abdomen revealed mild distention and a round, firm mass the size of a fist in the left lower quadrant. A diagnosis of intermittent intestinal obstruction from an inflammatory tumor was made.

At operation, the mass was found to be composed of loops of small intestine surrounded by a thin membranous capsule. The capsule was so adherent to the enclosed bowel that the individual loops could be separated only with great difficulty and considerable bleeding and detachment of the visceral peritoneum resulted. The enclosed intestine when separated from its capsule, measured 1 m in length. Its mesentery was short and thick.

After the operation a fecal fistula developed and the abdominal cramps and vomiting recurred. The patient died at the end of four days.

The second case was that of a girl seventeen years old who for three weeks prior to her admission to the clinic suffered from intermittent hypogastric pain associated with nausea and vomiting. The pain grew progressively more severe and the vomiting became frequent.

Physical examination revealed mild abdominal distention and a smooth firm ovoid mass in the hypogastrium. On rectal examination the uterus was found small. The adnexa were not palpable. A diagnosis of ovarian cyst was made.

When the abdomen was opened a grayish-white firm mass resembling an ovarian cyst was discovered in the lower abdomen. Exploratory aspiration of the mass with a needle evacuated no fluid. On incision, the mass was found to contain a loop of the ileum. The capsule was resected. The dislodged loop of bowel measured $1\frac{1}{2}$ m in length.

The postoperative course was uneventful. During the following year the acute ileus recurred coincidentally with erysipelas of the thigh and the patient died from the acute infection.

The author reviews the literature and discusses the various theories regarding the cause of the condition. The peritonitis has been attributed to tuberculosis, pyogenic infection, the absorption of toxins from the enclosed intestinal loop, and false membranes similar to Jackson's membrane. The symptoms are those of intermittent partial obstruction of the intestine finally terminating in acute ileus.

At the time of the acute ileus the operation of choice is enterolysis, but resection of the involved loop of intestine should be done then or at a second stage to prevent recurrence of the acute obstruction.

PETER A. ROSI, M.D.

GASTRO-INTESTINAL TRACT

Larimore, J. W. Anomalies in the Topography of the Alimentary Tract. *Am J Roentgenol*, 1931, **LXXI**, 223

The author discusses some of the anomalies of the colon and small bowel and the manner in which they are brought about.

Abnormal rotation is explained by an unusual sequence in the reduction of the embryonic umbilical hernia. The degree of descent of the cæcum is determined by the degree of initial axial rotation of the gut. In perforate diaphragm, the segments of the alimentary tract in the left chest are partially determined by the state of fusion of the peritoneum.

CHARLES H. HEACOCK, M.D.

Stewart, M. J. Precancerous Lesions of the Alimentary Tract. *Lancet*, 1931, **CCXXI**, 565, 617, 669

Precancerous states of the alimentary tract are numerous and varied and not of equal importance.

In the mouth the chief precancerous lesion is leukoplakia of the tongue, which is present in at least two thirds of the cases of cancer of that organ. It is interesting to note that whereas two-thirds of the cases of leukoplakia of the tongue are of syphilitic origin, leukoplakia of the vulva, also an important precursor of cancer, bears no relationship to syphilis but depends in part at least on the cessation of ovarian function.

In the stomach, chronic gastric ulcer is probably responsible for about one-sixth of the cancers, while simple adenomatous polypi account for 4 or 5 per cent. A relationship between chronic gastritis and cancer has not been clearly established as yet although there is a certain amount of evidence, both clinical and pathological, to suggest it. The anatomical distribution of carcinoma of the stomach indicates that mechanical friction is an important factor in the causation of the disease.

In the liver, multilobular (portal) cirrhosis is the usual precursor of primary cancer. Nine of ten liver-

successes in the treatment of the tumor. Biopsy was then done and general irradiation was given in small fields. The patient has now been symptom free for two years. The following thirteen patients were sufficient in the cancer. Not infrequently in recurrence of breast cancer in the chest. If the extension of the tumor into the pleural or anterior mediastinal spaces. Major chest wall resections may be done successfully in recurrent cancer. In the cases described the entire sternum and its costal attachments were removed. The patient has now been free from symptoms for two years. In both patients both pleural cavities were widely opened and one of the tumors had extended into

the lung resection of the lung was also done. The largest defect was covered by mobilization of the left breast. Definite paradoxical expansion was demonstrable in both cases. The patient was able to resume their occupations. The following patient had a chondrosarcoma of the chest wall which had broken through into the mediastinum and invaded the left lung. Resection of the second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, eleventh, and twelfth ribs and mobilization of the lung had been done and in half a year previously a local recurrence had developed. In a half a year previously. Resection of the second rib was repeated and irradiation was done. The patient now appears to be well.

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a half months. In 14 cases of cancer of the right colon the classical 1-stage hemicolectomy was done. There were 2 operative deaths. Three of the 8 patients followed up survived more than five years, 1 for four years and one month, 1 for two and a half years, and 1 for seven months. One died during the second year from hepatic metastases, and 1 in the fourth month from peritoneal generalization.

Of the 29 cases of cancer of the left colon, extirpation was impossible in 8. In the latter, fistulization with ileosigmoidostomy was done with 1 operative death. The 5 patients followed up survived about seven months. Twenty-one patients with cancer of the left colon were subjected to segmentary resection with preceding or concomitant fistulization. In 3 cases operated upon by Hartman's method there was 1 operative death. In 6 cases in which resection was done with immediate re-union there were 2 operative deaths. In the 14 cases the tumor was exteriorized and resected by the Bloch-Mikulicz method with the establishment of an artificial anus which was ultimately closed. In this series there were no operative deaths. Of the 21 patients treated by resection, 15 were followed up. Six survived more than five years, 5 for from three to five years, and 4 for from six months to three years. Three died—1 from pneumonia at the end of the second year, 1 from hepatic metastases, and 1 from cachexia of undetermined origin. In the 36 colonic resections there were 5 operative deaths, a mortality of 14 per cent. In the cases in which the tumors were exteriorized the mortality was almost nil.

Of 206 cases of cancer of the rectum which were treated surgically, an iliac anus was established in 38. The author makes a practice of amputating the rectum. He states that the anus should be placed in the iliac rather than the sacral region. In 168 of the cases reviewed, a radical operation was done. The methods included (1) the Kraske sacral amputation without the preliminary formation of an artificial anus (mortality 18 per cent), (2) extirpation of the whole rectum by the combined abdominoperineal route together with the iliac segment by the Quenu-Miles-Pauchet method (mortality 26 per cent, but anatomical results good), and (3) sacral amputation after the preliminary establishment of an artificial anus (mortality 8 per cent). Of the 82 patients followed up, 17 lived more than three years, 12 from three to five years, and 27 not over three years. Twenty-six deaths were due to visceral, chiefly hepatic, metastases. One patient died at the end of the fifth year from cancer of the thyroid.

Cancer of the duodenum is exceedingly rare. The author has seen only 1 case in which it was possible to determine definitely that the cancer developed on an ulcer base. In 3 cases of cancer of the ampulla of Vater, the tumor was exposed by a transverse incision of the duodenum. In 2 cases the tumor was the size of a small nut and operation was limited to posterior pancretic resection with transposition of the common duct and circular suture of the biliary orifice to the mucosa. In the third case the tumor was

the size of a pigeon's egg and ulcerated. Extirpation was effected by circular resection of the duodenum with re-union of the ends and cholecystogastrotomy. The patient died. Of the 2 other patients, 1 died within a few months from hepatic metastases, and the other died three years later from grippe.

In the 5 cases of cancer of the small intestine which were treated the lesion was situated in the upper segment about 1 meter from the duodenojejunal angle. In 2, it extended to the root of the mesentery and lateral entero anastomosis was done. One patient died at the time of the operation and the other after four months. In 3 cases high resection was done. One patient died soon after the operation and the others after nine months and twenty-five months respectively.

Radical operation was attempted also in a case of cancer of the liver in a man twenty-five years of age. After removal of the entire ectopic hepatic lobe the patient recovered rapidly, but within three months the right lobe became involved.

Seven cases of cancer of the gall bladder were treated. One patient died from shock and 1 from hemorrhage. A man of fifty-two years was well after seven years. One patient with an intravascular cauliflower growth was living two years and three months after operation. Two patients died at the end of the first year, 1 from metastases after four months and the other from an undetermined condition.

In cancer of the common duct in which the gall bladder is still intact it is best not to attack the lesion, but to divert the bile by choleduodenostomy or cholecystogastrotomy. In all of the author's cases the gall bladder was sclerosed or infiltrated. In 2 cases, metastases were discovered at operation. The abdomen was therefore closed. In 3 cases, the author resected the common duct and implanted the superior stump into the mobilized duodenum. One patient, whose portal vein was injured, died on the third day, and 1 patient survived nine months. In the third case the canal was reconstructed by epiplooplasty around a drain passed upward into the superior stump of the common duct and down into the duodenum. After a few months obstructive jaundice recurred and the drain was removed. A year later jaundice again developed and was followed by a rapid decline. In the fourth case the common duct was resected *en bloc*, but proved to be histologically benign. The resection was followed by epiplooplasty, and the patient was well after four years.

Ten cases of cancer of the head of the pancreas were treated. In 7, choleduodenostomy, and in 3 cases, cholecystogastrotomy, was done. There were 2 operative deaths. Of the surviving patients, 5 were followed up. The maximum period of survival was one year and three months, and the average period seven months. All of the patients were benefited.

In his conclusions the author emphasizes that cancer of the colon and rectum may be treated success-

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treatment should be continued for several months after the symptoms have ceased

Although gastric ulcers often heal spontaneously, the author is inclined to treat them surgically from the onset because a certain proportion of them turn out to be carcinomatous

Surgical treatment is indicated for the hemorrhagic type of peptic ulcer, recurrent duodenal ulcer, stenosis of the pylorus, and perforating and penetrating peptic ulcers. In cases of ulcer of the hemorrhagic type operation should never be done during the period of bleeding

Peptic ulcers occur most frequently between the ages of twenty and fifty years. In their causation, occupations play a very small role. Factors of importance are diet which lowers resistance or irritates the mucosa and foci of infection. Alcohol and tobacco prevent healing

When a patient remains free from symptoms for five years after treatment he may be considered cured. The incidence of medical cures varies. In some clinics it is as high as 90 per cent. The Mayo Clinic reported relief in 87 per cent of cases. In 69 per cent the relief was so complete that the patient paid no attention to his diet or the dyspepsia was so slight as to be controlled by simple measures. In 18 per cent the results were classified as fair, and in 13 per cent the relief was not permanent

WILLIAM J. TANNENBAUM, M.D.

Luzzi, G. F. *Ulcers of the Neopylorus* (Considerazioni sulle ulcere del neo piloro) *Polidini*, Rome, 1931, XXXVIII, sez. chir. 403

Luzzi reports two cases of gastrojejunal ulcer following gastro-enterostomy. As the bases of both of the ulcers contained pieces of silk suture, the suture was considered a possible cause of the lesions

After reviewing the vast literature on gastrojejunal ulcer, the author cites briefly the various theories regarding the pathogenesis of such ulcers and discusses the mechanical, nervous, secretory, and infective factors. Because of the variation in the clinical and pathological manifestations of the lesions, he assumes that more than one factor is involved in the pathogenesis

PETER A. ROSI, M.D.

Judine, S. S. *A New Series of Perforating Ulcers of the Stomach and Duodenum* (Nouvelle série d'ulcères perforés de l'estomac et du duodenum) *J. de chir.*, 1931, XXXVIII, 159

The author reviews 116 cases of perforated peptic ulcer with particular emphasis on the treatment

Only 14 per cent of the patients were women although the general frequency of ulcer in women is about 13 per cent. The relatively low incidence of perforation in the female can be explained only by less intense physical activity and more regular habits of daily life

Eighty per cent of the patients were between twenty-six and forty years of age

Occupation obviously had a part in the etiology as 56 of the patients were laborers. Seventeen were

in the professions (in the Soviet sense), being engaged in such work as that of motormen, conductors, and postmen, 25 were classified as "employees," probably office workers, and 14 were students

There was no seasonal variation in the number of perforations, but the time of day was important, the accident occurring most frequently in the afternoon between 3 and 6 o'clock and in the evening after supper

Of the possible mechanical influences involved, distention of the stomach is probably more important than external trauma

In the diagnosis, care must be taken not to attribute too much importance to a negative history of previous ulcer symptoms. It is evident that silent ulcers may occur as intelligent patients sometimes strongly deny previous gastric distress

The onset of the symptoms is almost invariably sudden. Occasionally, however, an accentuation of the ulcer symptoms precedes the perforation by two or three days, indicating activity in the lesion or a partial perforation

The initial pain is usually epigastric. The radiations of the pain are believed to be of importance in revealing the site of the perforation. Pain in the right shoulder is usually associated with duodenal ulcer, and pain in the left shoulder with ulcer of the lesser curvature of the stomach

The rarity of vomiting is a valuable sign as nearly every other acute abdominal condition is associated with this symptom

Much emphasis has always been placed on the initial shock of the perforation. In the author's experience profound shock is very rare and shock of the usual minor degrees disappears very quickly. Except when the patient is seen after a considerable delay, the pulse is slow or normal

Pneumoperitoneum is a conclusive diagnostic sign. Percussion in the right mid-axillary line with the patient on his left side is quite reliable. The best procedure is transverse roentgenography with the patient lying on his back. Occasionally escaping gas can be felt striking the anterior abdominal wall. This sign is rarely noted, but is absolutely diagnostic

A sufficient number of the symptoms and signs of perforated ulcer are always present to permit a prompt diagnosis. However, errors occasionally occur. In 3 of the cases reviewed, the patient was operated upon for appendicitis, and in 3 the supposed perforated ulcer proved to be acute pancreatitis. Twice, in spite of definite symptoms, no lesion of any kind was found. The patients recovered uneventfully

In 3 cases recovery resulted although the diagnosis was confirmed by roentgen examination and the patients refused operation. Even after the acute symptoms had disappeared the pneumoperitoneum could be demonstrated three or four days later

The interval between the perforation and the operation does not always determine the prognosis. A variety of other factors intervene. Most important are the general condition and the degree and

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tringent action), foreign protein therapy (novoprotein injections at intervals of about ten days), venesection or blood transfusion (to alter the internal inflammatory conditions), and belladonna, atropin, and cupiverin. The treatment is appropriate if the mucosal inflammation and its various causes are taken into consideration. A routine procedure is unwise.

Konjetzny disapproves of anti acid treatment by the more or less routine administration of alkali. He cites numerous reports of unfavorable effects from alkalinization. The basis of gastritis and duodenitis therapy is adequate dietetic management in the nature of protective treatment. In view of the pathogenesis of typical chronic ulcers, this treatment is of prophylactic value. Moreover, it sometimes results in the healing of chronic ulcers. In general, however, the medical treatment of chronic ulcers which have been complicated by penetration into neighboring organs or stenosis is rather hopeless. These require surgical treatment.

The indications for operation cannot be established rigidly enough. One definite indication for operation is severe recurring hemorrhage. Acute severe hemorrhage is usually treated successfully by medical measures, only in rare cases is operation necessary. The mortality is greatly increased by surgical intervention. The author emphasizes that even simple gastritis may lead to clinical manifestations which constitute definite indications for surgical intervention (symptoms of acute perforative peritonitis, organic stenoses, and severe recurring parenchymatous hemorrhage). The relative indication for operation depends upon the roentgen diagnosis. The demonstration of a niche is not sufficient for a diagnosis of surgical ulcer. Only when the roentgen examination shows the presence of ulcers which penetrate deeply into the liver or pancreas and cannot be expected to heal spontaneously should operation be performed at once. Konjetzny agrees with von Bergmann in recognizing a social indication. As methods of surgical treatment, only gastroenterostomy (as an emergency operation in so called inoperable ulcer at the pylorus or bulb) and resection according to one of the Billroth methods (operation of choice) are to be considered. By resection, the most severely inflamed portion of the stomach and duodenum is removed. The Billroth I operation is preferable to the Billroth II operation because it results in more physiological emptying and better food utilization. In cases of atypically located ulcers in the fundus, in which frequently there is little change in the stomach, Konjetzny performs a local excision since a resection would equal a total extirpation. In cases of ordinary antrum gastritis with an intact fundus, resection according to the Billroth I or II method constitutes a causal treatment, but in inflammatory involvement of the fundus it does not. In the latter condition the inflammation of the mucous membrane which is left behind must be relieved by medical means. The residual or secondary fundus gastritis is the cause of failures of operative treat-

ment. It is necessary always to remember that after a resection the patient has a crippled stomach, which fact must be considered in his manner of living.

WINKEL (2)

Casati, A. Duodenal Spots (Sulle "macchie duodenali"). *Radiol med*, 1931, LVIII, 1224

Casati states that spots in the duodenum produced by the residue of an opaque meal may be found in a great variety of conditions, but occur also when the duodenum is normal. Particles of an opaque meal may remain in the duodenum as long as fifteen hours, as in one of the cases cited. Their retention has no pathological significance, but is of value as a secondary finding in cases of duodenal lesions.

EUGENE T. LEDDY, M.D.

White, W. C., and Patterson, H. A. Late Results of Simple Suture in Acute Perforation of Duodenal Ucer. *Ann Surg*, 1931, XCIV, 242

In spite of the increase in our knowledge concerning gastric surgery, there is still no uniformity of opinion regarding the treatment of perforated duodenal ulcer. Acute perforation is most frequent in the third, fourth, and fifth decades of life. In nearly 40 per cent of cases it occurs in the fourth decade. Fewer than 3 per cent of the cases are those of females. Although in 1 of the cases reviewed by the authors there were no symptoms prior to the perforation, the perforation is usually preceded by the exacerbation of a chronic ulcer pain which lasts for from several hours to several weeks. Of 62 of the authors' cases, gastro intestinal bleeding had occurred in only 3 per cent. Ulcers which bleed are not apt to perforate. Shock is rare. Of great importance in the diagnosis are the subdiaphragmatic gas bubble seen in the roentgenogram made with the patient in the upright position and the transitory supraclavicular pain which usually occurs on the left side soon after the perforation. In 50 per cent of the authors' cases which were seen within the first twelve hours vomiting had not occurred. In the other 50 per cent it had occurred only once or twice. In late cases rectal tenderness may be extreme because of irritation of the pelvic peritoneum. In only 5 per cent of the authors' cases was the ulcer definitely gastric. In nearly all the perforation occurred within the first 4 cm. of the anterior wall of the duodenum and was cleanly punched out, from 3 to 6 mm. in diameter, and surrounded by a considerable zone of induration. Acute perforation and cauterization of the ulcer produce practically the same result.

In discussing simple suture, the authors state that, according to statistics, from 60 to 65 of every 100 patients who leave the hospital following simple suture of an acute perforation will remain free from gastric symptoms, from 10 to 15 will require surgery, and of the remaining 25, those who are reasonably careful about diet and general activity will progress satisfactorily.

The authors have been able to follow 19 of their patients who were treated by simple suture. Thir-

Rankin, F W The Surgical Treatment of Carcinoma of the Colon *Surg, Gynec & Obst*, 1931, lxx, 220

In the past decade surgical procedures directed toward pathological conditions of the colon have unquestionably reached a high plane of technical perfection. Pathologically, embryologically, and clinically the large bowel must be recognized as a bifunctional organ, the two segments of which develop neoplasms differing in type and demanding entirely different procedures for their extirpation. The diagnosis of lesions of the large bowel is made on the basis of a carefully taken history supplemented by a careful general examination and roentgenoscopy.

Although Rankin does not maintain that all carcinomata of the colon or rectum develop on the basis of polyps, he believes it is easily proved that a large majority have such an origin.

The most important early evidences of carcinoma of any portion of the colon are a change in the intestinal habit manifested either by irritability, mucous diarrhoea, or alternating periods of diarrhoea and constipation, localized persistent pain and tenderness, tumefaction, and profound anemia not accompanied by loss of blood and, if the lesion is in the left half of the colon, acute, subacute, or chronic obstruction.

In the Mayo Clinic it has been found of advantage to place patients with colonic lesions under the combined care of clinician and surgeon. This is particularly helpful in the pre-operative management which is instituted routinely and allows advantage to be taken of all factors of safety in an effort to reduce the immediate mortality and, at the same time, increase operability. The factors of safety are (1) adequate pre-operative rehabilitation combined with necessary decompression, (2) the selection of the optimal time for operation and of an operation which will best meet the requirements of the particular case, (3) intraperitoneal vaccination with colon bacilli and streptococci to immunize against peritonitis, the most common cause of death, (4) the use, in a large number of cases, of operations in multiple stages, (5) the use of spinal anesthesia unless it is very definitely contra-indicated, and (6) rigid adherence to a standardized postoperative regimen.

Several factors influence the choice of operation in the two halves of the colon. The question of graded operations on either side, however, is of greatest importance. Rankin believes that in the right half of the colon the procedure of choice is an aseptic ileocolostomy between the terminal ileum and the transverse colon followed by resection of the right segment at the same or a subsequent stage. He urges the use of end to side anastomosis in preference to lateral anastomosis in this operation because of the very desirable feature which the end-to-side method possesses over the lateral in side tracking the fecal current and allowing maximal reduction of the local inflammatory reaction around the growth. When this anastomosis is made, the surgeon may decide whether to do the resection in the same stage or

later. Recently Rankin found that in about half of the cases, the operation could be done just as satisfactorily and with an equally low mortality in one stage as in two, yet he is confident that this maneuver should be reserved for the patients who constitute the better risks.

Before any type of operation is decided upon, it is important to explore the abdomen. This should be done routinely in about the following order: (1) the liver, (2) the aortic nodes, (3) the nodes at the bifurcation of the mesenteric vessels, (4) the pelvis, and (5) the growth and its adjacent lymphatic structures. Palpation of the growth should be done last and gently.

In the left half of the colon, where obstruction is the most alarming symptom, the problem is different from that presented in the right half even as regards the anatomical type of bowel to be operated on. If the obstruction is acute and the bowel is dilated, oedematous, and filled with material, drainage by cecostomy proximal to the growth is urgently indicated. If, on the other hand, as in the majority of cases, the obstruction is mild and has been largely relieved by pre-operative decompression, resection frequently may be accomplished in one stage, but without anastomosis. Rankin believes that primary anastomosis should not be carried out in the left part of the colon except in extremely rare instances, and when it is done, a cecostomy proximal to it is always indicated.

In the last decade the mortality of surgery of the colon and rectum has been slightly reduced, but it is still relatively high as compared with the mortality of surgery for chronic ailments in other parts of the gastro-intestinal tract.

The operability in Rankin's series of cases at the Mayo Clinic in 1929 was 57.5 per cent. Operability unquestionably differs with different surgeons and is largely a matter of individual judgment.

Improvement in diagnostic methods, particularly in roentgenology and proctoscopy, which permits earlier recognition of lesions of the large bowel and rectum, and emphasis on the importance of more routine examinations of the colon, particularly after the development of the earlier symptoms of intestinal dyscrasia and in routine yearly examinations will bring cases of carcinoma of the colon to operation earlier and thereby increase the operability and the chances for satisfactory end results.

Finsterer, H. Surgery of the Colon. II. Carcinoma of the Colon. (*Die Chirurgie des Dickdarmes. II. Das Carcinom des Dickdarmes*) *Arch f klin Chir*, 1931, clxv, 1.

Slowly increasing constipation in advanced age should always awaken the suspicion of carcinoma of the colon. Neither increasing weight nor subsequent apparent diarrhoea is proof of the absence of carcinoma.

The roentgen examination should usually include, not only a barium enema, but also the administration of a bismuth meal and a study of the passage

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C J L L M D

has remained completely cured for seven years. The total mortality of colon resections was 25 per cent, and the mortality in uncomplicated cases, 20.6 per cent. If a radical operation is impossible because of distant metastases, the stenosis must be overcome, usually by means of colostomy, but in cancer of the right side of the colon, by entero-anastomosis close to the carcinoma. Occasionally unilateral exclusion with the formation of a cecal fistula for a safety valve is advisable. Ileosigmoidostomy should not be done as an anastomosis between the transverse colon and the sigmoid flexure is preferable. In 14 cases of colostomy for inoperable or metastatic carcinoma there were 4 deaths. Of 12 patients treated by entero-anastomosis, 3 died following the operation. Of 54 operated upon five years ago for carcinoma of the colon, 13 died following the operation. Of the surviving 41, the fate of 3 is unknown, 6 died within the five years from intercurrent conditions (pneumonia, senile debility, pulmonary embolism), 10 died within three years from peritoneal or liver metastases (1 after three months, 3 after one year, 5 after two years, and 1 after three years). Twenty-two patients (40.8 per cent of those subjected to resection and 53.6 per cent of those surviving the operation) remained free from recurrence for from five to nineteen years. Of these, 4 died after seven or eight years from apoplexy or senility and 1 from perforation of a duodenal ulcer. During an observation period of three years, 28 of 60 patients subjected to resection (46.6 per cent of all and 60.6 per cent of those discharged as cured) have remained free from recurrence. The results show that 34.1 per cent of all patients operated upon for carcinoma of the colon are free from recurrence three years after operation and 27.7 per cent are free from recurrence after five years.

Regarding technique, Finsterer emphasizes the value of thorough evacuation of the bowel before operation by means of cathartics and repeated enemas. As ether often causes a certain degree of intestinal atony, local anesthesia should be employed as much as possible. This applies particularly to colostomy for acute bowel obstruction. If the obstruction in ileus of the colon can be positively localized to the left side, Finsterer uses a left pararectal incision, but otherwise he employs a right-sided incision. The filled bowel displaced outside the abdominal wall should be at least partially emptied by puncture before it is sutured to the peritoneum. After fixation of the bowel to the abdominal wall a large drainage tube should be sutured into it to provide immediate escape for the bowel contents. In 1-stage resection of the colon Finsterer prefers side-to-side union. The blind ends should be very short and the afferent and efferent loops fixed with several Lembert sutures. The anastomosis should be at least 10 cm. long and made with 3 rows of sutures. It is important that the bowel ends be adequately nourished. Finsterer has had no deaths from insufficiency of the suture line. In simple resection of the sigmoid flexure he has always closed

the abdomen completely. However, if the ascending colon and hepatic flexure or the descending colon and splenic flexure must be mobilized, he drains the lateral cavities externally. In the 2-stage resection he ligates the mesentery and resects the bowel loop containing the carcinoma after exact closure of the abdominal wall. In the afferent loop, a large drainage tube is then introduced. In 23 cases the artificial anus was closed by laparotomy and the bowel ends were resected. Two of the patients died from peritonitis. The closure of the lateral colostomy may be done easily by separating the bowel from the muscle and fascia without opening the peritoneum. Of the 62 patients operated upon by this method, none died. After operations on the colon Finsterer insures free bowel motility from the first day on by means of pituitrin injections and regular bowel irrigations with warm water (small quantities under low pressure). He states that opium and its derivatives should be rigidly avoided. BERGMANN (Z)

Watkins, R. M. The Changing Picture of Appendicitis in Adults. *Ann Surg*, 1931, **xciv**, 197

In an investigation of the cause of the increase in the mortality of appendicitis, Watkins undertook the analysis of 1,000 cases to determine whether the appendicitis seen today differs from that seen previously. Pathologically, the cases were grouped into the chronic, acute simple, and acute suppurative types corresponding to the clinical chronic, acute, and suppurative types. There were 193 cases in the acute suppurative group, 292 in the acute simple group, and 515 in the chronic group.

In the acute suppurative group, operation with some type of drainage was usually done. The symptoms, such as pain, nausea, vomiting, and tenderness and rigidity in the right lower quadrant and over McBurney's point, were those of the usual syndrome of appendicitis, but except in the cases of patients between sixty-one and seventy years of age, the incidence of constipation was relatively low. Of the patients between sixty-one and seventy years of age, 54 per cent suffered from constipation. Diarrhea was uncommon. From 9 to 35 per cent of the patients had taken a cathartic after the onset of the attack. From 34 to 40 per cent, the percentage varying according to age, had normal bowel movements. About 20 per cent had abdominal distention.

In the cases of acute simple appendicitis, the pain, nausea, vomiting, rigidity, and tenderness were about the same as ordinarily noted, but constipation was present in only one-third. Diarrhea was unusual. About half of the patients had normal bowel movements. Distention occurred infrequently in all age groups.

In the cases of chronic appendicitis, the symptoms were not unlike those in the acute group. This was true especially as regards the incidence of constipation and diarrhea. Fewer than half of the patients suffered from constipation either during or between attacks. The majority had normal bowel elimination.

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bilinogen into bilirubin and though the polygonal cells are still able to transmit urobilinogen, they are unable to transmit bilirubin. Thus a slightly positive van den Bergh reaction is accompanied by a further increase of urobilinogen. In the next stage, the polygonal cells have lost their capacity to transmit bilirubin and are losing their ability to transmit urobilinogen. Thus an increasing van den Bergh reaction is accompanied by decreasing urobilinogen. Finally, the polygonal cells are unable to excrete bilirubin or urobilinogen. Consequently there is an intense van den Bergh reaction and complete absence of urobilinogen in the urine.

Pathologically this concept is substantiated by finding well-defined Kupffer cells when the polygonal cells are practically destroyed. Thus clay-colored stools may be found in the absence of mechanical obstruction as in acute yellow atrophy of the liver and possibly catarrhal jaundice. Indeed, catarrhal jaundice is probably more of a hepatitis than an obstructive phenomenon. Differentiation between catarrhal jaundice and acute yellow atrophy is not always possible, although in catarrhal jaundice the reaction is reversible whereas in acute yellow atrophy it is not.

STANLEY H. MENTZER, M.D.

Wakeley, C. P. G., and MacMyn, D. J. Non-Parasitic Cysts of the Liver. A Report of Two Cases Together with a Case of Cyst of the Ligamentum Teres Hepatis. *Lancet*, 1931, CCXXI, 675.

Non parasitic cysts of the liver are comparatively rare. In 1929, Stoesser reviewed 102 surgically treated cases that had been recorded in the literature and reported 2 cases of his own.

The 2 cases of non-parasitic cyst of the liver reported by the authors were those of women fifty and fifty-four years of age, and the case of cyst of the ligamentum teres hepatis was that of a man forty years of age.

All of the patients presented indefinite abdominal symptoms and all complained of a lump in the abdomen. The pain varied in severity, but in no case was extreme. All of the cases were treated successfully by operation.

In Case 1, the cyst was in the right lobe of the liver, close to the left margin and on the anterior border. In Case 2, it was in the left lobe and close to the right margin and anterior border.

In Case 1 the fluid contents of the cyst showed cholesterol crystals, and in Case 2, a trace of albumin and urea. In none of the cases was sugar or bile present. In Case 2, the cyst was lined by a single layer of flattened epithelial cells, and in Case 3, by a definite endothelial lining.

As a large number of solitary non parasitic cysts occur on the anterior border of the liver near the junction of the right and left lobes where, in the adult, is found the fibrous cord of the ligamentum teres representing the left umbilical vein of the fetus, the authors believe that in a few cases, as in Case 3, imperfect obliteration accounts for the formation of the cyst. In this connection they call attention to

the fact that under certain circumstances endothelial cells are capable of producing a secretion.

The resemblance of the cyst of the ligamentum teres in Case 3 to the solitary non parasitic unilocular cysts of Cases 1 and 2 and to similar cysts described by others is very striking when the macroscopic appearance, the histological structure of the cyst wall, and the character of the fluid contents are compared. The authors believe that in many instances the lining layer of these cysts has been incorrectly described as composed of epithelial rather than endothelial cells. Their theory regarding the origin of cysts of this type is supported by the fact that the cysts are easily shelled out from the liver substance in which they are embedded, for if the cysts arose primarily from the liver, their removal would be more difficult. Cysts near the hepatic end of the ligamentum teres may easily acquire a connection with the hepatic capsule and obtain a false capsule of flattened out liver tissue.

Non-parasitic cysts of the liver give rise to few, if any, symptoms. Therefore they usually remain unrecognized during life. Symptoms are due to the effects of pressure on neighboring viscera or complications arising within the cysts.

For the relief of symptoms, surgical intervention is recommended. In simple uncomplicated cases the best results are obtained by complete excision.

L. ENWORTH BOYD, M.D.

Howard, R. M. Acute Gall-Bladder Disease. *South W. J.*, 1931, LXVI, 709.

Suppurative conditions of the gall bladder include simple suppurative cholecystitis, phlegmonous cholecystitis, gangrene of the gall bladder, perforation of the gall bladder, pericholecystitis, and pericystic abscess. These conditions are due to infection by virulent organisms. The most common organisms demonstrable are the colon bacillus and the pus cocci either in pure culture or mixed with other bacteria. The bacillus typhosus is found less frequently today than formerly. The damage done by the infection is determined by the virulence of the organism and the resistance of the tissues.

Simple suppurative cholecystitis or simple empyema of the gall bladder without stones is rather rare. It is caused by pyogenic cocci or a mixed infection. The pain becomes localized in the right upper quadrant of the abdomen and is persistent instead of intermittent. The gall-bladder outline is definitely palpable and tender. Constitutional symptoms develop. These may be mild, such as a rapid pulse, sweating at night, and elevation of the temperature, or severe, such as chills, remittent fever, an increased leucocyte count, and profuse sweats. Severe symptoms usually indicate ulceration of the gall bladder or phlegmonous cholecystitis. The condition may be differentiated from other abdominal lesions on the basis of the history, the symptoms, and the findings of physical examination.

Recurrent simple empyema is not infrequent. In its recognition the history is of chief importance.

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A r e G o M o M D

LIVER GALL BLADDER PANCREAS AND SPLEEN

R b l w i t h I M J a n d i c a n d t h e A p p l i c a t i o n
f t h V n d B g h a n d U o b l i n g T e s t
C a d M A s J 193 255

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I n t h f i r s t i t n e t h k p f l e U r n a s t t h
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r u b n n t n t f t h b l o c f s m l W t h
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c e l l s o m p l t l y l s e t h e c a p t y t c o n v e t h o

bilinogen into bilirubin and though the polygonal cells are still able to transmit urobilinogen, they are unable to transmit bilirubin. Thus a slightly positive van den Bergh reaction is accompanied by a further increase of urobilinogen. In the next stage, the polygonal cells have lost their capacity to transmit bilirubin and are losing their ability to transmit urobilinogen. Thus an increasing van den Bergh reaction is accompanied by decreasing urobilinogen. Finally, the polygonal cells are unable to excrete bilirubin or urobilinogen. Consequently there is an intense van den Bergh reaction and complete absence of urobilinogen in the urine.

Pathologically this concept is substantiated by finding well defined Kupffer cells when the polygonal cells are practically destroyed. Thus clay-colored stools may be found in the absence of mechanical obstruction as in acute yellow atrophy of the liver and possibly catarrhal jaundice. Indeed, catarrhal jaundice is probably more of a hepatitis than an obstructive phenomenon. Differentiation between catarrhal jaundice and acute yellow atrophy is not always possible, although in catarrhal jaundice the reaction is reversible whereas in acute yellow atrophy it is not.

STANLEY H. MENTZER, M.D.

Wakeley, C. P. G., and MacMyn, D. J. Non-Parasitic Cysts of the Liver. A Report of Two Cases Together with a Case of Cyst of the Ligamentum Teres Hepatis. *Lancet*, 1931, CCXXI, 675.

Non parasitic cysts of the liver are comparatively rare. In 1929, Stoesser reviewed 102 surgically treated cases that had been recorded in the literature and reported 2 cases of his own.

The 2 cases of non-parasitic cyst of the liver reported by the authors were those of women fifty and fifty-four years of age, and the case of cyst of the ligamentum teres hepatis was that of a man forty years of age.

All of the patients presented indefinite abdominal symptoms and all complained of a lump in the abdomen. The pain varied in severity, but in no case was extreme. All of the cases were treated successfully by operation.

In Case 1, the cyst was in the right lobe of the liver, close to the left margin and on the anterior border. In Case 2, it was in the left lobe and close to the right margin and anterior border.

In Case 1 the fluid contents of the cyst showed cholesterol crystals, and in Case 2, a trace of albumin and urea. In none of the cases was sugar or bile present. In Case 2, the cyst was lined by a single layer of flattened epithelial cells, and in Case 3, by a definite endothelial lining.

As a large number of solitary non parasitic cysts occur on the anterior border of the liver near the junction of the right and left lobes where, in the adult, is found the fibrous cord of the ligamentum teres representing the left umbilical vein of the fetus, the authors believe that in a few cases, as in Case 3, imperfect obliteration accounts for the formation of the cyst. In this connection they call attention to

the fact that under certain circumstances endothelial cells are capable of producing a secretion.

The resemblance of the cyst of the ligamentum teres in Case 3 to the solitary non parasitic unilocular cysts of Cases 1 and 2 and to similar cysts described by others is very striking when the macroscopic appearance, the histological structure of the cyst wall, and the character of the fluid contents are compared. The authors believe that in many instances the lining layer of these cysts has been incorrectly described as composed of epithelial rather than endothelial cells. Their theory regarding the origin of cysts of this type is supported by the fact that the cysts are easily shelled out from the liver substance in which they are embedded, for if the cysts arose primarily from the liver, their removal would be more difficult. Cysts near the hepatic end of the ligamentum teres may easily acquire a connection with the hepatic capsule and obtain a false capsule of flattened out liver tissue.

Non-parasitic cysts of the liver give rise to few, if any, symptoms. Therefore they usually remain unrecognized during life. Symptoms are due to the effects of pressure on neighboring viscera or complications arising within the cysts.

For the relief of symptoms, surgical intervention is recommended. In simple uncomplicated cases the best results are obtained by complete excision.

L. ENWORTH BOYK, M.D.

Howard, R. M. Acute Gall-Bladder Disease. *South M J*, 1931, XXIV, 709.

Suppurative conditions of the gall bladder include simple suppurative cholecystitis, phlegmonous cholecystitis, gangrene of the gall bladder, perforation of the gall bladder, pericholecystitis, and pericystic abscess. These conditions are due to infection by virulent organisms. The most common organisms demonstrable are the colon bacillus and the pus cocci either in pure culture or mixed with other bacteria. The bacillus typhosus is found less frequently today than formerly. The damage done by the infection is determined by the virulence of the organism and the resistance of the tissues.

Simple suppurative cholecystitis or simple empyema of the gall bladder without stones is rather rare. It is caused by pyogenic cocci or a mixed infection. The pain becomes localized in the right upper quadrant of the abdomen and is persistent instead of intermittent. The gall-bladder outline is definitely palpable and tender. Constitutional symptoms develop. These may be mild, such as a rapid pulse, sweating at night, and elevation of the temperature, or severe, such as chills, remittent fever, an increased leucocyte count, and profuse sweats. Severe symptoms usually indicate ulceration of the gall bladder or phlegmonous cholecystitis. The condition may be differentiated from other abdominal lesions on the basis of the history, the symptoms, and the findings of physical examination.

Recurrent simple empyema is not infrequent. In its recognition the history is of chief importance.

common duct was ligated, they showed cocci. Of the six dogs in which both ducts were ligated, they showed the bacillus welchii in five and cocci in three.

It was quite evident that the presence of biliary stasis favored prompt infection of the bile and that the predominant flora was that of the liver, the anaerobic type.

The pathological changes revealed that the resulting inflammation of the gall bladder which occurred in about two thirds of the animals was undoubtedly of hepatic origin. In the early stages of the cholecystitis the inflammation was confined to the hepatic surface of the gall bladder, the peritoneal or free side being quite normal. In all cases the mucosa was the last coat to become involved. The earliest lesions were in the margins of the liver adjacent to the gall bladder and in the space between the gall bladder and the liver. Infection of the muscle wall of the gall bladder soon occurred. Bacteriological examination showed numerous Welch bacilli as well as cocci.

In conclusion the authors state that biliary stasis is a factor in the production of cholecystitis, the infection making its way into the gall bladder from the liver. Especially in the early stages the characteristic flora is that of the liver. It is in the acutely inflamed or gangrenous gall bladder that the bacillus welchii is most often encountered.

WILLIAM J. TANNENBAUM, M.D.

MISCELLANEOUS

Wood, W. B., and Wood, F. G. Congenital Elevation of the Diaphragm. *Lancet*, 1931, CCXXI, 392.

Congenital elevation of the diaphragm is due to faulty development of the organ, as the result of which the diaphragmatic dome on one side, usually

the left, forms a sac bulging upward into the thorax and containing displaced abdominal viscera.

The diaphragm is raised also in pregnancy and in many pathological conditions such as ascites, subphrenic abscess, pulmonary tuberculosis (especially that of the fibroid type), fibroid lung, atelectasis, pulmonary neoplasm, and paralysis of the phrenic nerve due to disease, trauma, or operation. Temporary elevation of doubtful origin may occur as the result of trauma.

In the living, the malformation is generally discovered by chance during roentgen examination or operation. While in some cases it is associated with dyspnea and dyspepsia, it has no characteristic symptoms and often causes no discomfort.

No curative treatment is possible. If gastric disorders develop, symptomatic treatment is obviously indicated.

HOWARD A. MCKNIGHT, M.D.

Pozzi, G. A Contribution to the Study of Retroperitoneal Cysts Originating from the Wolffian Body (Contributo allo studio delle cisti retroperitoneali di origine wolffiana). *Clin. chir.*, 1931, VII, 699.

In the first part of this article Pozzi reports a case in which operation for a broken-down tuberculoma of the cecum disclosed also a huge retroperitoneal cyst between the tail of the pancreas and the left kidney. He then discusses the difficulties met in the diagnosis of a lesion of the latter type and describes the surgical procedure carried out in the case reported, which resulted in complete cure.

The second part of the article consists of a detailed discussion of cysts of wolffian origin which is supplemented by numerous illustrations in black and white and in color.

EUGENE T. LEDDY, M.D.

GYNECOLOGY

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(15 mm of platinum) plus a cork or rubber container. In 5 of the cases reviewed intra-abdominal applications were made by Delporte's method, but this number of cases is not sufficient to warrant conclusions as to the value of the procedure. The author shows the evolution of the technique employed at Geneva by means of a table.

In the period from 1914 to 1925 a five-year cure was obtained in 14.7 per cent of the cases. The incidence of cure in different grades of malignancy was as follows:

Grade	Cases	Cure %
1	23	47.8
2	39	17.9
3	80	15.0
4	75	2.7

Between 1925 and 1930, radium alone was used in 86 cases and resulted in a cure in 18.6 per cent.

Three fatalities are recorded. One was due to septicæmia, 1 to perforation of the uterus, and 1 to generalized peritonitis. Minor accidents such as a slight febrile reaction were frequent. Occasionally necrotic plaques develop in the vagina. These are slow to heal, but have no serious effects. Vesico-vaginal fistule are usually due to destruction of neoplastic tissue which has infiltrated the septum. However, this is not always the case. Ulceration and stenosis of the rectum may occur without carcinomatous infiltration. Not infrequently the stenoses become corrected spontaneously with time.

Theoretically, the treatment of cervical cancer should be individualized, but practically this is impossible because, in spite of the extensive study of recent years, the radiosensitivity of the neoplasm and of the normal tissue remains largely unknown.

It is the present practice to apply an equal amount of radium to the uterine canal and the vagina, a total of 7,200 mgm/hr over a period of six days. In the uterus the rays are filtered with 1 mm of platinum plus rubber, and in the vagina, with 15 mm of platinum plus 5 mm of cork. The apparatus of Regaud has been adopted. After from six to eight weeks, X-ray treatments are given, 21,000 R. Salomon being applied in from 30 to 40 sances over a period varying from a month to six weeks.

In the primarily operable cases and those which have become operable, an extensive vaginal hysterectomy is performed. ALBERT F. DE GROAT, M.D.

Maluschew, D. The Schauta-Stoeckel Vaginal Operation for Cancer of the Cervix (Zur Schauta-Stoeckelschen vaginalen Collumcarcinomoperation). *Zentralbl. f. Gynaek.*, 1931, p. 1914.

After bilateral paravaginal incisions the author has often seen necroses and sometimes even persistent suppuration in the incisional wounds. Therefore, to obviate these incisions, he dilates the vaginal introitus with an automatic dilating speculum which he has devised. This instrument is applied after the vaginal flap has been formed and the vagina is gently and gradually spread until a dilatation of

from 8 to 10 cm has been obtained. Since the vagina is shortened at the same time, the field of operation is well exposed. With patience, even the atrophic vaginæ of nulliparæ may be dilated sufficiently. Only in cicatricially shrunken vaginæ is the dilating speculum inapplicable.

In a case in which the ureter was cut during the radical vaginal operation the author freed it for a distance of several centimeters and, after twisting it on its long axis several times as recommended by Potem, sewed it to one side to the connective tissue of the pelvis. At autopsy eight days later, after death from sepsis due to necrosis and suppuration of the paravaginal incisions, the 5-cm section of twisted ureter, shrunken down to a delicate strand, was found grown firmly to the wall of the pelvis.

Mobility of the uterus is sometimes diminished by inflammatory infiltration of the ligaments and by adhesions. Therefore the author opens into the peritoneal cavity through the vesico-uterine peritoneal fold at once, withdraws the fundus of the uterus, separates the adnexa and ligaments between ligatures, and then replaces the uterus in the abdominal cavity. After this mobilization of the uterus the rest of the operation, ligation of vessels, isolation of the ureters, and dissection and removal of the parametrium, is easier. H. H. SCHMID (G).

Koenig, K., and Chatillon, F. Radium Therapy in Non-Cancerous Diseases of the Uterus (*La cuntherapie des affections non cancéreuses de l'uterus*). *Revue franç. de gynéc. et d'obst.*, 1931, 27, 1, 353.

With the exception of some extensive statistics published in the United States, the literature of radium therapy in benign lesions of the uterus has been rather sparse during the past ten years. Since the authors' report in 1921, sufficient time has elapsed to allow an accurate estimate of the value of the method.

In all except one of the eighty-six cases reviewed the radium was used for hæmorrhage due to fibromyoma or some other cause exclusive of decidual endometritis, ovarian cyst, and pelvic inflammation.

In the indications, age is of the utmost importance. Because of the difficulties of exact dosage, the authors have always maintained that in the cases of young women radium irradiation should be used only as a last resort. Radium irradiation has been employed in vaginal metrorrhagia to regularize the function of the endometrium chiefly in America. Up to the present time most French gynecologists have reserved it for exceptional cases. A very small dose of radium may be followed by amenorrhœa, and it is impossible to foretell the final result. Siredev's dictum, "In the cases of young women an application of radium is always a grave measure and should be considered only after the failure of other therapeutic procedures" is still valid. The study of various reports shows that there is no standard dose as the effects are very different in different patients.

Of the uterus, the cases only were those of vaginal menorrhagia. These cases were as follows:

Case 1. The patient was a 31-year-old woman with a history of hyperplasia. Application of 720 mgm hr of dexamethasone resulted in a reduction of the uterine bleeding. The patient was then treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 2. The patient was a woman in her 30s with a history of fibroid tumors of the uterus. The patient had a normal menstrual cycle. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 3. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 4. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 5. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 6. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 7. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

Case 8. The patient was a 31-year-old woman with a history of endometrial hyperplasia. The patient was treated with a normal dose of the drug. The result was a normal menstrual cycle.

The single application of the drug was sufficient to control the bleeding in all cases. The results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug. The results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug.

The results of the treatment were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug. The results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug.

At the time of the study, the results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug.

ADNEXAL AND PERIUTERINE CONDITIONS

In the present study, the results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug. The results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug.

The results of the treatment were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug. The results were as follows: In cases 1 through 8, the patient was able to control the bleeding with a normal dose of the drug.

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ovary with metastases in the parametrium, the liver, and the thyroid gland. The unusual feature of the case was the Basedow syndrome.

Mori reported about twelve examples of Basedow's disease with primary tumor of the thyroid (*Frankfurt Ztschr f Pathol*, 1913), but only one case of secondary tumor (autopsied by Schultze and reported by Hirschfeld). In Henke-Lubarsch's book a case of hypernephroma with metastasis in the thyroid is reported (Klose). The author discusses the theories regarding Basedow's disease (neurosis and pluriglandular disease). In some cases of Basedow's disease the genital organs exhibit a primary hypoplasia. These changes apparently exert an influence on the hyperplasia or subinvolution of the thymus. The constitutional make-up also plays an important role. Opinions differ as to whether Basedow's disease is a hyperfunction or a dysfunction. The author agrees with Kocher that it is not worth while to argue about whether it is a hyperthyreosis or a dysthyreosis as these are merely terms, not clear-cut definitions. Mori ascribes the Basedow symptoms in cases of metastasis in the thyroid to the accumulation of colloid substances, the extensive and rapid growth of the tumor metastases, and the increased vascularization with its more extensive distributory channels. The author's case agrees in every detail with Mori's theories. Klose ascribes the thyrotoxic symptoms to so-called basedowification of the struma caused by the toxic-irritative influence of the metastases on the parenchymal cells. Wegelin believes that the nervous disposition of the individual is of more importance than the other influences mentioned. In his opinion, the presence of adenomatous nodules is not necessary for the development of the hyperthyreosis as the adenomatous nodule is not very active functionally, the condition is induced rather by the metastases in the parenchyma.

VILMA J. RASKOVIC (G)

MISCELLANEOUS

Mayer, A. "Thrombosis and Embolism from the Standpoint of the Gynecologist" (*Thrombose und Embolie vom Standpunkt des Gynaekologen aus*) *München med Wchnschr*, 1937, 1, 179.

Mayer discusses the increase of thrombosis and embolism, the causes of the increase of thrombosis, predisposition to thrombosis, the clinical syndrome of thrombosis and embolism, prophylaxis against thrombosis and embolism, and the treatment of pulmonary embolism.

Since the year 1926 an increase in the incidence of thrombosis and embolism has been noted by some surgeons and has been attributed to the influenza epidemic of 1923 and 1924. Others believe, however, that the increase is only apparent.

The gynecological literature has few reports on this subject and these few differ widely from one another. To obtain statistics of value the separation of obstetrics from gynecology and of laparotomies

from vaginal operations is necessary. In his own clinic Mayer has established the fact that in the post-war period the incidence of puerperal thrombosis, which has always been high because of the frequency of varices, has remained about the same, but that puerperal embolism has increased threefold. Puerperal thrombosis has shown no distinct increase since 1926, whereas embolism has doubled or trebled in both the obstetrical and the gynecological divisions. These findings speak against an apparent increase. Similar observations have been made in other clinics (Bonn and Koenigsberg).

Serious consideration should therefore be given to constitutional changes due to physical and psychic exhaustion caused by the war and deterioration of the female constitution manifested by an increase in the incidence of weak labor pains, late puberty, and genital infantilism. The blood and vascular systems also become deteriorated.

Pregnancy with its associated development of varices especially favors thrombosis, and laparotomies, the most common operations performed on women, are done below the diaphragm where the danger of thrombosis is increased. Operations for carcinoma, myoma, and prolapse are the most likely to be followed by thrombosis. Thrombosis hardly ever occurs before puberty and is very rare up to the age of twenty years. Mahler's pulse has not proved to be a reliable premonitory sign. The author believes that a subfebrile temperature is more dependable. Seasonal or meteorological factors have not been demonstrated.

The fact that fever is not found at all times proves that thrombosis is not always of infectious origin. Pain in the sole of the foot is considered characteristic. Thrombosis of the femoral vein may occur without a perceptible swelling of the extremity, it develops usually at the end of the first week or during the second week.

These remarks apply also to emboli, the frequency of which is probably much greater than can be demonstrated. Most emboli arise from occult forms of thrombosis, embolism after thrombosis of the saphenous vein is rare. Infectious thromboses lead to eclampsia less often than non-infectious thromboses.

In the prophylaxis of thrombosis and embolism particular consideration must be taken of diseases of the heart. The evaluation of gymnastics for prophylaxis is not uniform. In treatment, Mayer continues to elevate the extremity and to use the foot rolls described by Payr. He usually keeps the patient with thrombosis of the femoral artery in bed for three weeks, but in some cases for only fourteen days.

For the treatment of pulmonary embolism Mayer prefers morphine. He gives cardiac remedies only occasionally. Gynecologists have been reserved in the use of Trendelenburg's operative treatment of pulmonary embolism, as the diagnosis is often difficult and in half of the cases in which the condition is recognized with certainty the necessary time is lacking. Moreover only one-fourth of the cases are

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Brouha, L., and Hinglais, H. The Diagnosis of Pregnancy by the Brouha-Hinglais-Simonnet Reaction (Le diagnostic de la grossesse par la réaction de Brouha Hinglais Simonnet) *Gynec et obst*, 1931, **XXIV**, 42

This modification of the Aschheim Zondek test for pregnancy utilizes immature male instead of immature female mice. It depends upon hypertrophy of the seminal vesicles produced by injecting the urine of pregnant women subcutaneously. The technique consists of daily injections of 0.3 cc. of urine over a period of from eight to ten days. The hormone of the anterior lobe of the pituitary gland present in the urine produces hypertrophy of the seminal vesicles which is first manifested forty-eight hours after the first injection. The test is best read at the end of ten days, although in cases in which a more rapid diagnosis was desired, the authors obtained satisfactory results at the end of the sixth day. Toxic urines (especially in cases of intra uterine death of the fetus) not infrequently kill the animals. By treating such urine samples with ether, according to the method recommended by Aschheim and Zondek, the toxic elements are removed.

In a series of 401 cases the authors obtained an accuracy of 99.7 per cent. The 1 false positive reaction was attributed to a technical error. The earliest positive diagnosis was made on the fifth day following the expected date of menstruation. Positive reactions are obtained in uninterrupted intra uterine and extra-uterine pregnancy as well as in cases of hydatidiform mole and chorionepithelioma. The positive reaction disappears from four to eight days after delivery. In the presence of intra-uterine fetal death a positive reaction persists as long as the placental elements continue to function. In 1 case a positive reaction persisted for two months after the death of the fetus. In cases of mole pregnancy the amount of hormone present in the urine greatly surpasses that excreted during normal pregnancy. The persistence of a positive reaction after expulsion of a mole signifies continued chorionic proliferation and possibly malignant degeneration. In the cases of normal non-pregnant women and women suffering from gynecological diseases the test was negative.

The authors report further studies made to determine the period of puberty of the male mouse by comparing the weights of the seminal vesicles and the body weights over a period of from thirty to seventy days. These weights were compared also with those of animals receiving daily injections of urine from pregnant women and those receiving injections of urine from non pregnant women. The results are summarized as follows

1 In the great majority of the animals, puberty (as indicated by the weight of the seminal vesicles) occurred between the fifth and sixth weeks.

2 There was no definite relationship between age and body weight and therefore no relationship between body weight and the weight of the seminal vesicles.

3 A striking increase in the size and weight of the seminal vesicles followed injections of urine from pregnant women.

4 The weights of the seminal vesicles of animals receiving daily injections of urine from non-pregnant normal women did not differ from those of animals injected with urine from non-pregnant women with gynecological diseases nor from those of animals receiving no injections.

The authors conclude that the age of the animal is of greater importance than its body weight. When the age is uncertain, they consider it unwise to use a mouse weighing more than 10 gm. They believe that the method described is more accurate than the original method of Aschheim and Zondek which utilizes immature female mice.

HAROLD C. MACK, M.D.

Naeslund, J. Investigations of the Passage of Nitrogenous Substances from the Fetus to the Mother (Untersuchungen ueber den Uebergang N haltiger Stoffe vom Foetus auf die Mutter) *Acta obst et gynec Scand*, 1931, **VI**, 293

The author reports studies of the protein and water content of the serum and the fibrinogen concentration in the blood of the mother and child.

In the case of the mother the determinations were made on blood specimens taken shortly before, during, and shortly after delivery. In the case of the child they were made on blood from the umbilical vein and the umbilical artery taken simultaneously with the specimens of the mother's blood at the time of delivery.

In a few cases the mother was given preliminary treatment consisting in the administration of a peptone solution by mouth or an injection of creatinine or a solution of sodium chloride a short time before delivery.

The results of the determinations of the protein in the serum, which were made in forty-seven cases, were as follows:

At the time of delivery the serum protein was usually much higher in the mother than in the child, particularly in cases in which labor was brief and energetic. The mean value of the mother's blood was 82 per mille as against 60.6 per mille in the blood from the umbilical vein and 61.9 per mille in the blood from the umbilical artery. When labor was protracted or the pains were weak, possibly

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nephropathy, 105 of pre eclampsia, and 145 of eclampsia, a total of 2,786 cases belonging to the renal gestosis group. These are compared with the obstetrical admissions to the University Clinic at Helsingfors, Finland, during the period from 1925 to 1928. At Helsingfors there were only 1,543 cases of renal gestosis among 9,865 obstetrical admissions. The city of Vupuri therefore shows an incidence of renal gestosis which is approximately twice as high as that of Helsingfors.

The author arrives at the conclusion that all types of renal gestosis, beginning with simple albuminuria, generally present the manifestations characteristic of the eclampsia group. In the mild forms these symptoms are less prominent. Schroderus considers simple albuminuria an early stage of renal gestosis, but states that a sharp distinction cannot be drawn between the various entities constituting the group.

The incidence of gestoses seems subject to distinct regional variations. Each locality appears to have its characteristic incidence. Constitutional as well as exogenous factors appear to be responsible for the variations. Among the exogenous factors are climate, seasonal changes, infectious diseases, hygienic conditions, medical care, physical exertion, psychic stimuli (especially those due to pregnancy and parturition), and nutrition. By means of graphs, the author shows a close relationship between infections of the upper respiratory tract and gestosis. The eclampsia curve varies in different countries and localities. The effect of nutrition is shown by the fact that eclampsia was least frequent in the patients who lived upon a meager diet. In Finland, its incidence was lowest during the period of famine from 1919 to 1920, and in Germany, during the starvation period of the World War.

The frequent recurrence of renal gestosis during subsequent pregnancies seems to suggest the existence of permanent renal damage. When it first appears, the gestosis shows more acute symptoms which often progress to the stage of eclampsia. In subsequent pregnancies it usually assumes a more chronic type and progresses merely to the stage of pre eclampsia. In pre eclampsia the symptoms appear earlier during gestation and disappear later after parturition than in eclampsia. Fifty-five per cent of all patients with renal gestosis in the series reviewed had had some form of renal gestosis during a previous pregnancy. Gestoses show a definite tendency to recur even though the patients are entirely asymptomatic in the interval between pregnancies. Predisposing causes of gestosis are primiparity and multiple pregnancy. In the cases reviewed, the incidence of gestosis was 1.6 times greater among primiparae than among multiparae, and four fifths of all primiparae with multiple pregnancies suffered from some form of renal gestosis.

It is necessary to distinguish between the toxic effects of pregnancy and toxic effects not related to pregnancy. Pregnancy appears to exert a toxic effect upon various organs and to be responsible for nephrotic changes in the kidney resulting in simple

albuminuria. Exogenous factors, on the other hand, may produce nephritis during pregnancy just as at other times. It is not inconceivable, therefore that gestoses frequently represent a combination of nephrosis and nephritis. The author distinguishes 2 main types of gestosis, the acute and the chronic, each of which has subtypes.

Albuminuria, even in minimal amounts, must be considered an early sign of toxemia. A gradual increase in albuminuria is better tolerated than a rapid increase. The former most often progresses only to the stage of pre-eclampsia, but the latter usually ends with symptoms of true eclampsia. Albuminuria is seldom absent in eclampsia, but it is often only a transient manifestation and may be easily overlooked. In pre eclampsia the amount of albumin present in the urine is often greater than in eclampsia.

The significance of blood-pressure changes is still debatable. It is still unknown whether hypertension is a separate entity or a manifestation of renal damage. In eclampsia, blood-pressure readings are subject to greater variations than in pre eclampsia.

Albuminuric retinitis is twice as frequent in pre-eclampsia as in eclampsia. It occurs with particular frequency in multiparae suffering from pre eclampsia.

With regard to treatment the author states that these conditions should all be considered as 1 group. The treatment of choice depends on whether the renal changes are primarily nephritic or nephrotic and whether the condition is acute or chronic. No single form of therapy is suitable for all cases.

The mortality in the cases reviewed was as follows

	Mortality Per cent
Entire series	0.54
Without gestosis	0.24
With gestosis	1.18
Albuminuria	0.36
Nephropathy	0.33
Pre eclampsia	1.90
Eclampsia	15.17

The number of convulsions does not appear to affect the prognosis. Early diagnosis and treatment alone will reduce the present high mortality of eclampsia. Eclampsia can be prevented only in the sense of early diagnosis and early termination of the pregnancy.

Renal gestosis is responsible also for a large number of fetal deaths even in cases of simple albuminuria. The fetal mortality may be considerably lowered by early treatment of the condition and the premature induction of labor even in mild cases.

HAROLD C. MACK, M.D.

LABOR AND ITS COMPLICATIONS

Morón, R. B. The Period of Dilatation (El periodo de dilatación). *Semana med.*, 1931, XXXVIII, 338, 425, 517.

Following a review of the mechanism of normal dilatation of the cervix in labor, the author discusses

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and run the risk of birth injuries and the stillbirth rate is nearly 3 times the collective stillbirth rate. They are in favor, in hospital practice, of trial labor with the possibility of cesarean section provided circumstances permit the proper conduct of labor under test conditions and the obstetrician has adequate experience. They have found that in the great majority of cases trial labor is followed by spontaneous or easy forceps delivery. They emphasized that when once induction is started, the bolt is shot. They stated that cesarean section is undesirable after any manipulation of or interference with the cervix, whereas after a properly conducted trial labor the obstetrician is unhampered in his choice of the method of delivery.

WRIGLEY said that if, at the thirty-fourth week of pregnancy at the earliest, the fetal head cannot be made to engage in the pelvic inlet, cesarean section is usually advised, and if a tight fit is apparent after that period of gestation, induction is usually performed. Of 6,012 deliveries during the years from 1925 to 1930 inclusive, 184 (3 per cent) were associated with a minor degree of pelvic contraction. In the latter, the maternal morbidity was 4.3 per cent and the fetal mortality just over 10 per cent.

MORRIS-JONES reviewed 1,000 cases of minor pelvic contraction. In 475 (58.5 per cent) labor was successfully induced by mechanical contrivances, and in 339 (41.5 per cent) it was successfully induced by means of drugs. The average length of labor following induction was twenty-three and six-tenths hours. Following the induction, 78 (9.5 per cent) of the women developed puerperal morbidity. In the cases of 65 (5.4 per cent) of the latter the fever was definitely attributable to sapraemia. Two patients developed septicæmia.

BOURNE stated that while there are definite indications for the induction of labor, he believes the method is used unnecessarily often.

LACK also expressed the opinion that labor is induced too frequently.

WYATT said that induction followed by the use of forceps is associated with a high fetal mortality, whereas when induction is not followed by forceps, the fetal mortality does not exceed 5 or 6 per cent.

FORD called attention to the importance of the industrial efficiency of the mother. He said that in Lancashire, mothers are usually opposed to operation, they would rather lose their babies than undergo an operation necessitating long absence from their work.

BREWS and GIBBERD said that in doubtful cases of disproportion they make an examination under anesthesia.

WRIGLEY stated that if either induction or cesarean section must be done he prefers induction.

ROLAND S. CROW, M.D.

Bourne, A. The Management of Breech Labor. *Brit. M. J.*, 1931, II, 372.

At Queen Charlotte's Hospital, London, the fetal mortality of breech delivery is 11 per cent in the

cases of primipara and 8 per cent in the cases of multipara.

The causes of fetal death in breech delivery as shown by autopsy are intracranial hemorrhage, injuries to the abdominal viscera, and asphyxia.

The author describes in detail his method of handling extended legs. He believes that when the child is of average or large size one or both legs should be brought down. He does this when the cervix is nearly dilated. Whether one or both legs are brought down depends on the size of the child in relation to the pelvis. After the legs have been brought down, they should be folded as far as possible in the normal position by the buttocks as wider dilatation is obtained when both buttocks and legs are pushed through the cervix. More babies are injured or killed by pulling on a foot to hurry the delivery than by any other procedure.

After the buttocks and body have been delivered, the author delivers the extended arms. His technique is that described in the standard textbooks.

In the delivery of the head by the usual methods care must be taken to avoid too much hurry. With the back in an exactly posterior position and with good flexion of the head and moderate pressure on the fundus of the uterus by an assistant or nurse, progress can be made. In cases of flat pelvis or large child in a borderline pelvis difficulty may be expected even when the obstetrician is especially skillful.

The author concludes by citing the three clinical types of breech presentation and describing the steps of the delivery in detail. He does not use forceps on the after-coming head in any case.

HARVEY B. MATTHEWS, M.D.

Dearnley, G. Antenatal Treatment of Breech Presentations. *Brit. M. J.*, 1931, II, 371.

Dearnley describes a method of performing version in cases of breech presentation by manipulation through the abdominal wall previous to delivery. She states that as version often occurs spontaneously at about the thirty-fourth or thirty-fifth week of gestation, the manipulation should not be attempted earlier. It is best done in the thirty-fifth week as at that time the presenting part has usually not descended into the pelvis. It may often be done without anesthesia, but if the patient is very nervous or her abdominal muscles are very strong, an anesthetic may be necessary. If an anesthetic is needed the manipulation should be delayed until the thirty-seventh week as it may induce labor.

The abdomen should be well dusted with talcum powder and the manipulation done gently but firmly. The presenting part should be pushed out of the pelvis, the head of the child grasped with one hand and pulled down toward the pelvis and the breech grasped with the other hand and pushed up. In order not to disturb flexion, it is best to pull the head down toward the pelvis away from the back of the child. If version in this direction fails, the other direction may be tried. If the head does not sink

Spirito, F The Importance of the Suturing Technique in the Cicatrization of the Cesarean Section Wound (Valore della tecnica della sutura nel processo di cicatrizzazione della ferita cesarean) *Arch di obst e gynec* 1931, XXXIII, 383

Spirito studied experimentally the effect of various methods of suturing the uterus after cesarean section. The scars were examined from eight to ten months after the operation. As a rule the scar was thinner than the remaining uterine wall because of apparent introflection of the mucosa and serosa between the muscle layers of the wound. It usually consisted of connective tissue, but when the separate muscle layers were carefully approximated by multiple layers of sutures regeneration of the muscle tissue was seen, and in the scar produced by careful suturing of a wound in a non gravid uterus, complete regeneration of the muscle fibers occurred throughout the wound.

From these findings it appears that the suturing technique is an important factor in the cicatrization of cesarean section wounds. Spirito concludes that single layers of the uterine muscle should be carefully approximated, preferably with interrupted sutures, and that the sutures should be so placed as to prevent penetration of the mucosa and serosa into the wound.

PETER A. ROSI, M.D.

Lofquist, E Clinical Statistical Studies of Premature Births (Klinisch statistische Untersuchungen ueber Fruehgeburten) *Acta obst et gynec Scand*, 1931, VI, Supp. II

In his study of premature births the author compared cases of premature birth with cases of birth at term and investigated the relation to the various problems involved of the weight of the child and the duration of pregnancy. The material consisted of 4,741 uncomplicated deliveries of infants weighing between 600 and 2,990 gm. which occurred at the University Gynecological Clinic at Lund in the period from 1900 to 1928. Two thousand six hundred and fifty of the mothers were primiparæ.

In the investigation of the general frequency of premature birth, infants weighing less than 2,500 gm. were considered premature. In the study of the other problems the cases of primiparæ and multiparæ were considered separately and divided into groups according to the weights of the infants. For the comparison between early and normal delivery the cases in which the infants weighed between 600 and 2,390 gm. were grouped together (primiparæ, 525; multiparæ, 591) and the cases in which the infants weighed most, between 2,700 and 2,990 gm., were used as controls (primiparæ, 1,513; multiparæ, 1,043).

In all comparisons between premature and normal deliveries the possible influence of chance was considered as is demanded by modern statistics, and a difference was regarded as positive only when it was greater than 3 times the average error.

The findings and conclusions are summarized as follows:

Premature births were more frequent in the cases of primiparæ than in those of multiparæ. Among primiparæ, premature births seemed to be relatively more common in the cases of older women than in those of younger women, and among multiparæ they seemed to be more frequent in the cases of the women who had borne the greater number of children.

The probable causes of spontaneous premature births are hydramnios, oligohydramnios, extra-uterine pregnancy, placenta prævia, toxæmias of pregnancy, nephropathies, eclampsia, eclampsia, premature separation of the placenta, acute infectious diseases, tuberculosis, and syphilis.

In cases of premature birth abnormal presentations were considerably more frequent. In cases of occiput presentation the incidence of the right and left position was more nearly equal than in cases of delivery at term.

In the cases of primiparæ the average duration of labor up to the expulsion of the child was somewhat less in cases of premature birth than in those of delivery at term, whereas in the cases of multiparæ it was about the same in cases of premature birth and delivery at term. Protracted labor seemed to be more frequent in cases of premature birth than in those of delivery at term.

The arithmetical average of the duration of the placental stage was somewhat greater in cases of premature delivery than in cases of delivery at term. On the other hand, the average duration of the placental stage in cases of premature birth was somewhat less than in cases of delivery at term. Prolongation of this stage was more frequent in cases of premature birth than in cases of delivery at term.

Complications such as premature rupture of the membranes, prolapse of the umbilical cord, prolapse of an arm or foot and retention of the membranes were more common in cases of premature delivery than in cases of delivery at term.

With the exception of perineotomies, interventions were necessary more frequently during labor and in the placental stage in the cases of premature delivery than in the cases of delivery at term.

It appeared more difficult to induce premature labor pains by puncture of the membranes in the cases of women with contracted pelvis who were otherwise normal than in the cases of women the majority of whom presented symptoms of eclampsia and eclampsia.

In the puerperium, fever was more frequent and morbidity was higher than in cases of delivery at term. Permanent disability from the time of delivery was more frequent in cases of premature birth than in those of delivery at term.

Asphyxia of the child was more frequent in cases of premature delivery than in those of delivery at term. Likewise, the total morbidity, the total mortality, and the mortality of the children born alive was higher in the cases of premature delivery than in those of delivery at term.

The prematurely born children of multiparæ had a higher total mortality than those of primiparæ, a

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BOURNE stated that at the International Obstetrical Congress in Rome in 1902 Pinard declared himself emphatically against abortion, while Schauta advised interruption of pregnancy during the later months. Between 1902 and 1914 the Germans were strongly in favor of abortion in cases of tuberculosis complicated by pregnancy, but since the war many German obstetricians question the value of abortion and determine the indications on the degree of the pulmonary infection. Most authorities agree that each case must be regarded as a separate problem. Forssner with Sundell and Kjellin made studies of the mortality in 2 large series of tuberculous women treated at Stockholm. Three hundred and ninety-six non pregnant women in various stages of pulmonary tuberculosis were compared with 203 pregnant women with pulmonary tuberculosis who were watched for one year after delivery. Of the women with latent tuberculosis, 2 per cent of those who were not pregnant and 1 per cent of those who were pregnant died, and of those with active tuberculosis, 6 per cent of each group died. Of those with advanced pregnancy, 37 per cent of the non-pregnant and 46 per cent of the pregnant died. Bourne believes that

physicians should inform tuberculous women that pregnancy is not dangerous when the lesion is healed or inactive, that it is unfortunate when there is an active infection, and that it is disastrous when the disease is advanced. He is of the opinion that abortion has no place in the treatment of pregnancy associated with pulmonary tuberculosis except in the cases of women who became pregnant while improving from the active to the latent stage of tuberculosis. The proper course is to treat the disease and leave the pregnancy alone.

RIVETT said that some cases of tuberculosis improve during pregnancy, while others begin to show exacerbations quite early in the pregnancy. A definite or active lesion is more likely to progress rapidly after delivery. Pregnant women with active tuberculous lesions should be given full sanatorium treatment throughout their pregnancy and for at least six months thereafter. When the tuberculous lesion is markedly increasing in activity early in the pregnancy Rivett advocates termination of the pregnancy. After the twentieth week he allows the pregnancy to continue until the child is viable.

CARL H. DAVIS, M.D.

level of the twelfth rib. If this is not the case the kidney has been fixed too low. The twelfth rib must always be defined and clearly seen.

9 For ten days after the operation the patient must lie flat on her back with the foot of the bed raised. This position reinforces the action of the stitches and neutralizes any tendency of the stitches to be torn out by coughing or vomiting. It is during this period that firm adhesions are formed between the bared kidney and the posterior abdominal wall. After the formation of these adhesions it does not matter what happens to the stitches.

10 The patient should lie flat on her back in bed for three weeks after the operation.

11 When the patient rises from bed a course of abdominal exercises should be prescribed as the muscles will have lost tone during the time she remained in bed.

12 Arrangements must be made for adequate after-treatment for from six months to a year. This treatment must include particularly measures to build up the exhausted nervous system.

J. SYDNEY RITTER, M.D.

Bugbee, H. G. Diverticulum of the Ureter. A Report of Three Cases. *J. Urol.*, 1931, **xxvi**, 215.

A review of the literature shows that ureteral diverticula are rare. The seven cases on record and the three cases reported by Bugbee in this article show that they may be either congenital or acquired. Congenital diverticula are due to an abortive attempt at the formation of a second ureter or are secondary to congenital stenosis of the ureter. The lower part of the ureter seems to be especially prone to such dilatations. Acquired diverticula occur later in life following acquired stricture or prolonged obstruction of the ureter.

Five of the ten diverticula reviewed were in the lower part of the ureter and undoubtedly secondary to congenital stenosis. Three were elongated blind sacs representing an abortive attempt at the formation of a second ureter.

A congenital diverticulum of the ureter, like a congenital hydronephrosis, may give rise to no symptoms until infection develops or calculus formation occurs.

The presence of a diverticulum may sometimes be determined by introducing a soft pliable catheter into the ureter. The catheter is apt to be obstructed in its passage or to become coiled up in the diverticulum.

If the diverticulum consists of a blind pouch, the sac may be excised and the opening into the ureter closed. If the ureter empties into the sac and there is a terminal ureter through which the diverticulum empties into the bladder, resection of the ureter followed by its re-implantation into the bladder is indicated unless the diverticulum is so large that the ureter would be subjected to too great tension or the kidney is damaged by infection. Under the latter circumstances ureteronephrectomy should be done.

JACOB S. GROVE, M.D.

Walker-Taylor, P. N. Experimental Transplantation of the Ureters Into the Intestine. *Italian & New Zealand J. Surg.*, 1931, **i**, 158.

The author describes the development of the various techniques now in use for transplantation of the ureters. As the high mortality seems to be due chiefly to infection, he describes three methods of operation by which he reduces the chance of infection to the minimum.

In Plan A, or the open tunnel technique, a longitudinal incision is made in the peritoneum of the rectosigmoid and then a tunnel is burrowed longitudinally between the circular muscle layer and the mucosa for a distance of from 1.8 to 2.5 in. with a McCormick blunt dissector. Another incision is then made through the peritoneum at the distal end of the tunnel down to the mucosa and a straight needle to which the ureter is attached with catgut is passed through the tunnel. The straight needle is then replaced with a curved needle, the mucosa is pulled into the distal incision with mosquito forceps and incised, and the curved needle is passed through this opening and out through the bowel wall. The ureter is then pulled down into the opening and anchored with catgut after it has been treated with ether swabs. The whole operative area is buried with a longitudinal row of catgut sutures.

In Plan B, or the closed tunnel technique, the steps are the same as those in Plan A except that, instead of opening the lower end of the tunnel, a perforating instrument shaped like a pencil is passed through the tunnel, through the mucosa, and into the lumen. This is then withdrawn and a straight needle is guided by a grooved director through the tunnel and out through the bowel wall as before.

In Plan C the irreversible tunnel technique, the procedure is the same as in Plan B except for the use of a tunneling instrument a little larger than the size of the ureter to which the split ureter is attached by a silk suture. An assistant introduces a metal cylinder 30 cm. long through the anus to the point of exit of the tunnel in the bowel and the tunneling instrument with the attached silk suture is introduced and drawn out of the anus. The ureter is then pulled into position and the silk attached to the exterior surface of the body with adhesive or by stitches. The ureter is anchored by a lateral suture at the proximal end of the tunnel.

BLADDER, URETHRA, AND PENIS

Thompson, A. R. Congenital Deformities of the Lower Urinary Tract. *Proc. Roy. Soc. Med.*, Lond., 1931, **xxiv**, 1385.

In cases of ectopia of the bladder and of epispadias with separation of the pubes in the male there is a groove which runs along the dorsum of the penis from near the bladder to the end of the penis. Thompson believes that this groove is formed by the protuberance of the two corpora cavernosa, one on each side, which constitute the main bulk of the organ. In this type of case there is no control over

5

since the exposure. However, when it is definitely known that the woman has recently infected others with gonorrhoea two treatments are given even when the patient presents himself within twelve hours.

The most frequent cause of failure in early cases in which the chances of success seem good is probably infection of the glands of Littre which is not reached by the germicidal solution.

After the use of many remedies with varying degrees of success the authors found it best to employ from 20 to 25 minims of a freshly made solution of argyrol. The collodion should be of the plain U S P type not the flexible, and of medium thickness. Collodion which turns white while drying does not hold satisfactorily.

When the patient reports too late for a quick cure or when the treatment described has failed the so-called routine treatment is started. This consists of a quiet simple life. The patient is told that it requires about six weeks of good behavior. While the diet is comparatively unimportant in the treatment of gonorrhoea, vegetables and fruit should be eaten freely and meats and sweets taken only in moderation. Tea and coffee are not harmful. Exercise should be moderate. Long train and motor trips are likely to cause an extension of the infection with resultant complications.

Hot baths appear to be of definite benefit, especially in posterior urethritis and hyperacute infections. Internal medication is of little use except to render the urine bland. In deep urethritis the balsamics are sometimes beneficial.

In acute urethritis vaccines will often prove disappointing although they are not without value in some of the complications which arise.

The authors believe that in acute gonorrhoea and even in hyperacute infections it is usually best to employ gentle injections and low pressure irrigations from the first. There are available many mild non-irritating germicides which will prove adequate. If neutral flavine is used it should be employed in only a weak solution and not for long as it may cause urethral strictures without pain or burning. The best preparation for irrigation appears to be a 1:8000 solution of potassium permanganate in a physiological salt solution.

Of primary importance in delaying the cure of urethritis are strictures. However it is not always possible to determine with certainty the conditions that justify dilating or investigating the urethra in subsiding acute urethritis or early chronic urethritis.

Stripping of the urethra is advised for patients with subsiding acute infections and chronic urethritis when the secretion shows a definite amount of pus after urethral irrigation.

Whenever in the course of treatment of gonorrhoea, injections or irrigations burn the urethra or cause pain some other preparation should be substituted for the solution used.

In the cases of patients who have taken treatment regularly over a considerable period of time and have a return of the discharge when the local treatment is

stopped it is often advisable to omit treatment for about a week or two, allowing the discharge to become profuse if it will. Such recrudescences appear to be of definite value in increasing immunity which may have become stationary and non-sterilizing.

C. FRAVIER STEPHEN, M.D.

Young, H. H. A Radical Operation for the Cure of Cancer of the Penis. *J. Urol.*, 1931, xxvi, 285

Young is convinced that in cancer of the penis total emasculation is entirely unnecessary and is unwise because the lymphatic drainage is almost entirely into the glands of the groin and practically never into the scrotal or perineal regions. He believes that the excellent results he has obtained are due to a considerable extent to the removal in continuity of the entire lymphatic drainage from the penile carcinoma to the upper limits of the groin on each side.

In the operation described the region of the tumor is very carefully covered with a tightly fitting, antiseptic dressing and the region of the operation thoroughly disinfected. The sterilizing process is very important as the carcinomatous lesion is usually markedly infected a fact which probably accounts for the fairly high frequency of postoperative complications.

The first part of the operation consists in dissecting cleanly the subcutaneous fat and glands from the deep fascia, proceeding from above downward. As this dissection goes on, the anterior surface of the inguinal canals, the external rings, and the spermatic cords with their fascial coverings are exposed (Fig. 1). The dissection is continued below Poupart's ligament along the femoral vessels, the saphenous artery and vein being ligated above and below the mass. The dissection is then followed for a short distance down the scrotal sac so as to insure the removal of

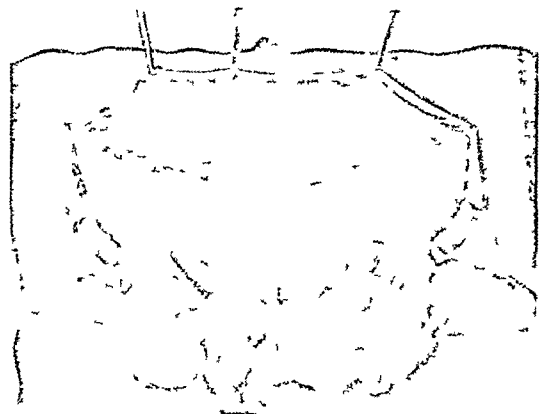


Fig. 1. Young's radical operation for cancer of the penis and glands of the groin. Dissection of upper portion of groins and suprapubic region completed, exposing spermatic cords.

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chronic cases posterior Kollman dilatation aids in the drainage of obstructed follicles. Constant and prolonged treatment is often not desirable. An intervening rest period is advisable. Poorly draining infection is usually associated with seminal vesiculitis. In such cases the condition is apt to produce metastatic symptoms. Perineal prostaticotomy may be beneficial.

MAURICE MEITZER, M D

Patch, F S, and Foulds, G S Tuberculous Infection of the Adenomatous Prostate *Brit J Urol*, 1931, III, 269

Tuberculosis occurring in the prostate in the absence of tuberculosis elsewhere in the genito urinary tract is extremely rare.

The authors believe that in men over fifty years of age genital tuberculosis is not so unusual as has generally been assumed. Of 60 cases of prostatic tuberculosis reviewed by Gayet, 7 were those of men between fifty and sixty, 6 those of men between sixty and seventy, and 4 those of men seventy years of age or older. In only 1 of their own cases of tuberculosis of the prostate was the diagnosis made before operation although in 7 cases tuberculosis was present elsewhere in the body. They emphasize that the possibility of tuberculosis of the prostate should be borne in mind in all cases in which prostatic enlargement is associated with local or general tuberculosis. Of 337 fatal cases of tuberculosis reviewed by Randall, prostatic obstruction was found in 45.

In some cases, especially those in which indurated areas were encountered in the course of prostatectomy, the condition has been confused with neoplasia. Scott cited 2 cases in which a diagnosis of carcinoma of the prostate was made.

The authors emphasize the importance of a routine examination of all prostates removed as the only way of recognizing a rare combination of maladies and guarding against postoperative complications.

HENRY L SANFORD, M D

Comolli, A Syphilis of the Prostate (La sifilide della prostata) *Arch ital di urol*, 1931, VII, 551

Following a brief review of the forty-four cases of syphilis of the prostate which he was able to find in the literature the author reports a case of his own. His patient was a man sixty years old who had contracted syphilis in 1890. The local lesions disappeared after brief treatment. In 1917, tertiary lesions appeared on the right leg but healed under energetic treatment with arsenobenzol and mercury. On November 20, 1929, the patient came to the hospital saying that for some time he had noticed a slight burning sensation at the beginning of micturition, and that three days before his admission to the hospital he had had a burning pain in the night and a desire to urinate but was able to void only a little urine drop by drop. His physician sent him to the hospital because attempts at catheterization were unsuccessful.

Physical examination showed the patient to be in poor general condition. On rectal examination the

prostate was found to be enlarged to double its normal size, hard but elastic in consistency, and firmly fixed to the surrounding tissues. The findings excluded hypertrophy of the prostate and prostatitis and suggested a malignant tumor. However, on account of the absence of the woody hardness of malignancy, the history of syphilis, and a positive Wassermann reaction, syphilis of the prostate was suspected. The patient recovered under specific treatment.

The author states that there is little in the clinical picture of syphilis of the prostate to differentiate it from other forms of prostatitis. Therefore in any unexplained prostatic condition the possibility of the disease should be borne in mind and specific treatment should be tried. The prognosis is good if specific treatment is given before irreparable damage has been done. If syphilis of the prostate is not treated it tends to progress and large cavities and ulcers may be formed.

The only death in the cases reported in the literature occurred from marasmus.

AUDREY GOSS MORGAN, M D

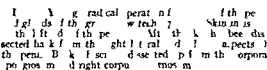
Séméniaiko, E Inflammatory Suppurative Lesions of the Prostate According to the Material of the Urological Clinic of the First University of Moscow (Lesions inflammatoires suppurées de la prostate d'après les matériaux de la clinique urologique de la première université de Moscou) *J d urol med et chir*, 1931, XXXI, 20

The author analyzes 390 cases of inflammatory suppurative lesions of the prostate, 53.6 per cent of which were gonorrhoeal, 21 per cent postgonorrhoeal, 16.4 per cent non gonorrhoeal, and 9 per cent inflammations with hypertrophy. The prostate usually became involved during the second or third week of the infection. The author believes that the greater delay in the involvement of the prostate today is due to the change in the methods of treatment. The injection of bactericidal substances as practiced by the German school has been largely superseded by the lavage of the French school.

Of the lesions in the hospital cases reviewed, 145 were parenchymatous, 159 suppurative, 31 follicular and acute catarrhal, and 54 subacute and chronic.

Surgical intervention was practiced much less frequently in gonorrhoeal than in non gonorrhoeal prostatitis. The mortality was 6.2 per cent in the non-gonorrhoeal cases, 1 per cent in the gonorrhoeal cases, and 11.4 per cent in the cases of hypertrophy. The author believes that surgery is indicated in cases with a leucocytosis, a rise in the temperature, symptoms of periprostatitis, and deterioration of the general condition, and is usually necessary in cases of non gonorrhoeal metastatic prostatitis, but that in the majority of cases the treatment should be expectant.

Perineal prostaticotomy was done 44 times in the cases reviewed, and incision of the abscess through the thigh or the anal or perineal region 16 times. Puncture of the abscess through the rectum was per-



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 I o s t M I

Lowell C. Youg Radical Operations of the
Cuff Company of the Pacific A Report of
Thirty Five Cases of the 23rd Nov 95

In the cases reported the average of the
patients was forty years. In all cases the new

a family history of carcinoma. The author believes that accumulated smoking causes the cancer to be a fact. The causation of the condition is the environmental circumstances of Jews among the nations.

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GENITAL ORGANS

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matogenesis may be arrested at the stage of the spermatogonium. The child of a man with pulmonary tuberculosis is the product of an abnormal spermatozoid.

PAGE

MISCELLANEOUS

Kretschmer, H. L. Diseases of the Urinary Tract in Infancy and Childhood. *Surg., Gynec. & Obst.*, 1931, lxxi, 129

Lesions of the urinary tract in children are easily overlooked. The general practitioner, and even the pediatrician, often fail to recognize the need for the services of the urologist when his services could do the most good. The author urges better cooperation between the pediatrician and the urologist particularly in teaching institutions.

The history is just as important in diseases of the urinary tract in children as in similar diseases in adults. An observant mother is a great help in the diagnosis. The physical examination may immediately reveal a condition requiring cystoscopic study. Routine examination of the urine, X-ray examinations, tests of renal function, and cystoscopic manipulations are indicated in the cases of children as well as in those of adults. Greater care must be exercised in interpreting the roentgenograms and in the differential diagnosis.

Malignant tumors of the kidney are much less common in children than in adults. The general symptoms are fever, abdominal pain, loss of appetite and weight, and irritability. The one constant sign is enlargement of the abdomen. A careful urological examination is necessary. The author cites several illustrative cases.

Tuberculosis of the kidney is rare in childhood. In an extensive practice Kretschmer has seen only eight cases in children under fourteen years of age. However, he believes it is sometimes overlooked. He therefore emphasizes that every case of pyuria and hæmaturia should be studied carefully. The problem is the same as in renal tuberculosis in the adult. When the diagnosis of chronic unilateral renal tuberculosis is made, nephrectomy is the proper procedure provided the other kidney is free from tuberculosis.

The author discusses in detail urinary calculi, acute and chronic infections of the kidney, congenital anomalies, spina bifida, obstruction to the outflow of urine, hypertrophy of the verumontanum, diverticulum of the bladder, and congenital valves of the posterior urethra. His conclusions are summarized as follows:

1. Lesions of the urinary tract in infancy and childhood occur with greater frequency than is generally supposed.

2. With the exception of benign hypertrophy of the prostate and malignant disease of the prostate and bladder, the types of lesions occurring in infancy and childhood closely parallel those found in the adult.

3. In certain instances, examination has revealed the presence of serious destructive lesions of the kid-

neys that might have been cured if an early diagnosis had been made and treatment had been given promptly.

4. The problem of diagnosis and treatment differ in no way from the problems in the adult.

5. Close cooperation between the general practitioner, the pediatrician, and the urologist is desirable in order that the patients may be examined in the early stages of the disorder and destruction of vital organs may be prevented by proper treatment.

ELMER HESS, M.D.

Nuvoli, U., and Impiombato, G. The Syndrome of Urinary Calculosis in Cases of Malformation of the Spine (Sindromi di calcolosi urinaria e malformazioni della colonna vertebrale). *Arch. ital. di urol.*, 1931, vii, 589.

Roentgen examination has shown that there are many cases with clinical symptoms of stone in the urinary tract in which no calculi are present. The symptoms in these cases are exactly like those of true calculosis. Bloody urine is often passed during the attacks of colic, and painful points may be found over the kidneys and ureters. However, examination of the urine reveals no inflammation.

Of 150 cases with this syndrome which were examined by the authors, calculi were found in only 26, but in all except 16 of the 150 there were malformations of the spine such as lumbarization of the twelfth dorsal vertebra, dorsalization of the first lumbar vertebra, sacralization of the fifth lumbar vertebra, lumbarization of the first sacral vertebra, and spina bifida. Twelve cases in which renal colic was caused by spasm without calculosis are reported in detail.

The authors believe that by retarding the elimination of urine the spasm in such cases may result in renal calculosis, and that it produces hæmaturia by causing the rupture of small blood vessels. The spinal malformations, which are due to a complex congenital disorder, produce the symptoms simulating calculosis by exerting an effect on the urinary tract through the sympathetic nervous system.

AUDREY GOSS MORGAN, M.D.

Herrold, R. D. Laboratory Methods for the Diagnosis of Gonorrhœa in the Male. *J. Urol.*, 1931, xvi, 379.

In recent gonorrhœal infections single stain smears are sufficient in the presence of acute clinical symptoms. When, in the presence of suggestive clinical symptoms, the smears are negative, further examinations should be made before gonorrhœa is ruled out.

The finding of large numbers of bacteria with or without typical intracellular or extracellular diplococci by the use of the single stain should be corroborated during the same examination by the use of the Gram stain. If all findings then suggest specific infection, a culture should be made. If the culture proves negative, provocative measures may be used more safely. After such measures more smears and cultures should be made. The most common cases

SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Bergstrand, H. Recklinghausen's Osteitis Fibrosa Generalisata with Involvement of Several Glands of Internal Secretion and a Roentgenologically Demonstrable Parathyroid Tumor (Ostitis fibrosa generalisata Recklinghausen mit planglandulaerer Affektion der innersekretorischen Druesen und roentgenologisch nachweisbarem Parathyreoidetumor) *Acta med Scand*, 1931, lxxvi, 128

The bone changes found in osteitis fibrosa are not typical of this condition as marked bone resorption may be found in a large number of other diseases and in physiological lacunar resorption. Marked bone changes in osteitis fibrosa, such as cyst formation and characteristic brown bone tumors, may be merely extensions of the bone resorption, and conversely there may be cases in which the pathological changes in the bone are extremely limited, not even being demonstrable in the roentgenogram, and there is no pain in the bones.

In the case reported by the author the pathological changes in the bones were very slight despite marked parathyroid hyperplasia and a parathyroid tumor formation sufficient to cast a roentgen shadow. The patient had the classical symptoms of hyperparathyroidism such as emaciation, asthenia, exhaustion, nervousness, tachycardia, obstipation, emesis, thirst, polyuria and a course characterized by remissions and recurrences. The thyroid showed diffuse hyperplasia, the adrenals, a deficiency of chromaffin in the medulla, and the parathyroid, cells resembling those found in children being practically free from fat. The parathyroid hyperplasia was diffuse and the adenoma formation usually found in osteitis fibrosa was absent.

SAMUEL J. FOGELSON, M.D.

Bromer, R. S., and John, R. L. Ollier's Disease, Unilateral Chondrodysplasia. *Am J Roentgenol*, 1931, lxxvi, 428

In 1899 Ollier described a cartilaginous dystrophy characterized by irregularity and retardation of ossification of the cartilage in the epiphyseodiaphyseal region which occurs usually in the hands and feet and affects mainly the diaphyseal ends of the long bones. The cartilaginous tissue does not undergo the normal process of ossification, but remains in the form of masses of cartilage which eventually are spontaneously converted into bony tissue. Ollier emphasized particularly the unilateral distribution of the lesions, whereas others have described hereditary deforming chondrodysplasia or multiple cartilaginous exostoses without a special distribution.

Frangenheim considered the unilateral cases as examples of mild enchondromatosis.

Stocks collected 495 cases of multiple cartilaginous exostoses and 142 cases of multiple enchondromatosis. He does not regard Ollier's disease as an entity.

In a case which Kummer kept under observation for fifteen years there was no change in the distribution.

Voorhoeve considers exostoses as a secondary sign and believes that the primary change is a disturbance of growth. He classifies all of these lesions as dyschondroplasia.

Bentzon states that the clear spaces at the ends of the diaphyses in roentgenograms are generally believed to be due to replacement of bone by cartilage. He has found that the dense lines running obliquely and sometimes almost parallel with the line of the shaft show a characteristic localization. They follow the arterial supply in a very striking manner. Hence he attributes them to a disturbance of the arterial supply. He regards Ollier's disease as a typical reaction of the bones against an active hyperemia of bone tissue resulting from disorders in blood-vessel innervation. He believes that the pathological processes may be related to the phenomena seen in callus formation following interruption of the blood supply in fracture.

The authors review 26 cases, including their own, which come strictly under the classification of unilateral chondrodysplasia. RUDOLPH S. REICH, M.D.

Timofeev, P. One Hundred Cases of Gonorrhoeal Arthritis (100 Fälle gonorrhoeischer Arthritiden). *Virhandl d 3 russ Urol-Kongr*, Leningrad, 1929, p 3, 1930, p 110.

Of the 100 cases of gonorrhoeal arthritis reviewed by the author, only 5 ran their course as a metastatic monarthritides with pus in the joint cavity. In these 5, gonococci were found in the pus. All of the others ran their course as toxic inflammations localized sometimes predominantly in the periarthral tissues of the joint or the tendon sheaths and synovial membranes but usually in all of these parts simultaneously. In 4 per cent of the cases a joint exudate was demonstrable, but in spite of the multiplicity of the foci it appeared in only 1 or 2 joints. In 25 cases it was serous, in 17 serofibrinopurulent, and in 4 purulent. Gonococci were found in the pus only in the 5 cases of metastatic inflammation. The blood cultures were negative.

The author's material rules out a predisposition from previous joint diseases such as rheumatism and tuberculosis. In 4 of the cases the joint affection developed during the course of the urethritis, in 21, in the first week, in 25, in the second week, in 8, in the third week, in 16, in the first month, in 10, in the second or third month, in 3, after more than three

of this type are (1) those in which the infection is associated with structure or chronic prostatitis (2) those of patients who have had some previous medical condition and (3) those in which there is a definite history of infection during the previous year.

When the smears are doubtful in case of a patient with exacerbation of a chronic infection the patient should not be subjected to instrumental examination or provocative measures until after further local observation.

Loss of smears may occur with negative cultures and positive cultures with negative smears.

Gonococci met metes in a saprophytic state. It is under these circumstances that cultures are of the greatest aid.

The value of culture is directly proportional to the care used in the collection of the specimens.

Appropriateness of the medium and faecal culture conditions for growth. The author discusses a simple and satisfactory blood agar medium for growth of the gonococcus.

As a rule nothing can be learned from serological methods that cannot be determined better from smears and cultures but serological tests may be useful in the differential diagnosis of complicated cases associated with so-called postgonorrheal lesions in the genital urinary tract.

Slit preparations are also of great value in the diagnosis of gonorrhea.

In the malodorous bacteria that most often be differentiated from gonococci smears and cultures are valuable for the identification of Gram positive diplococci with similar morphological characteristics.

C. T. S. STEPHEN M. I.

the region of the gelatinous nucleus but also farther forward, in adolescent kyphosis may develop. The author has described this process in an earlier article (*Fortschr Röntgenstr*, 11, 359). Bulgings of the intervertebral disk tissue into the vertebral canal (posterior Schmorl's nodules) were found in 15 percent of the spines in which a search was made for them.

At the end of the article the author discusses briefly the kyphosis of old age which develops on the basis of softening and necrosis in the anterior portions of the intervertebral disks. JUNGHANS (Z)

Kallius, H. U. Malformations of the Cervical Spine, Especially the So-Called Klippel-Feil Syndrome (Die Missbildungen der Halswirbelsäule, insbesondere ueber das sogenannte Klippel-Feilsche Syndrom) *Arch f orthop Chir*, 1931, 11, 440.

After a detailed discussion of general theories regarding malformations of the spine and their genesis, the author presents an ontogenetic theory and a theory of the causal genesis of such malformations. These synostoses may represent arrests in development as well as fusions.

The author reports in detail eighteen cases of malformations of the cervical spine, and on the basis of drawings made from roentgenograms explains their classification according to one of the theories.

For the Klippel Feil syndrome the fusion of malformed vertebrae is essential. Simple synostoses of well-formed vertebrae have nothing to do with it. The differentiation of the deformity from other malformations of the cervical spine is discussed and attention is called to the frequency with which the condition is confused with tuberculosis of the spine.

As a rule no special treatment is required for malformations of the cervical spine, but occasionally measures to prevent an increase in associated curvatures may be indicated. In some cases of short neck it may be desirable to effect a cosmetic reduction of the muscle mass at the side of the neck. This can be done by means of the special collar incision described by Schanz. JUNGHANS (Z)

Chandler, F. A. Lesions of the "Isthmus" (Pars Interarticularis) of the Laminae of the Lower Lumbar Vertebrae and Their Relation to Spondylolisthesis. *Surg, Gynec & Obst*, 1931, 111, 273.

The author bases his discussion of lesions of the lower lumbar vertebral laminae on a review of the literature, a study of fetal spines, and eighteen cases of such lesions which he reports in detail. He applies the term "isthmus" to the interarticular portion of the neural arch. He believes that solution of bony continuity at this point is more common than has been recognized. A developmental origin has been claimed for such a cleft, but the author's study of fetal spines showed a single osteogenic center for the isthmus instead of two centers and did not support the developmental theory. The incomplete fissure occasionally seen in roentgenograms suggests

defective ossification, but complete division with separation of the fragments must be attributed to trauma. The latter type of lesion may be diagnosed clinically and by the proper interpretation of good lateral roentgenograms. Fractures of the isthmus are frequently complicated by spondylolisthesis.

In conclusion Chandler states that in selected cases complete fusion of the lower lumbar spine and sacrum will restore stability and relieve the symptoms. WALTER P. BLOUNT, M.D.

Rocher, H. E., and Roudil, G. Sacrococcygeal Malformations, An Anatomicoclinical Study and an Attempt at Classification (Malformations du sacro coccyx. Etude anatomique et essai de classification) *Rev. de chir*, Par., 1931, 1, 299.

Two main types of sacrococcygeal malformations are recognized—those accompanied by marked malformation of the pelvis and leg and usually by disturbances of the sphincters, which can be recognized by clinical examination, and those characterized by a small lesion which causes no trouble and is found only accidentally on roentgen examination.

The authors report six cases representing the following malformations:

1 Total sacrococcygeal aplasia accompanied by lesions of the pelvic girdle, legs and sphincters and easily identified with the aid of roentgenograms.

2 Subtotal sacrococcygeal aplasia accompanied by complex lesions of the spine and by sphincteric disturbances.

3 Hemiatrophy of sacral vertebrae, a unilateral malformation involving several vertebrae which is accompanied by minor cord lesions but not by sphincteric disturbances and is most often found by roentgen examination.

4 Total or partial aplasia of the coccygeal segments without clinical symptoms which is found on roentgen examination.

The detailed case reports are supplemented by outline drawings of the roentgen features and followed by a discussion of the embryological development of the spine in each of the conditions described. KELLOGG SPEED, M.D.

Sœur. Osteomyelitis of the Hip (Osteomyélite de la hanche) *Re. de chir*, Par., 1931, 1, 377.

This report is based on forty nine cases of osteomyelitis of the hip which were treated on the orthopedic service of the University of Iowa. In seven cases there was a history of trauma. Various organisms were found, but the staphylococcus predominated. The condition becomes less frequent with age and is rarely seen after the twentieth year. It often follows an acute infectious disease.

Sœur inclines to the opinion that the disease is the result of a septicaemia. The exact site of origin of the process cannot be determined. Three main types are recognized: (1) infectious synovitis of the hip, (2) infectious bony coxitis beginning in the head of the femur, and (3) true osteomyelitis beginning in the diaphyseal side of the epiphysis and spreading

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the region of the gelatinous nucleus but also farther forward, an adolescent kyphosis may develop. The author has described this process in an earlier article (*Fortschr Röntgenstr.*, 21, 359). Bulgings of the intervertebral disk tissue into the vertebral canal (posterior Schmorl's nodules) were found in 15 percent of the spines in which a search was made for them.

At the end of the article the author discusses briefly the kyphosis of old age which develops on the basis of softening and necrosis in the anterior portions of the intervertebral disks. JUNGHAUS (Z)

Kallius, H. U. Malformations of the Cervical Spine, Especially the So-Called Klippel-Feil Syndrome (Die Missbildungen der Halswirbelsäule, insbesondere ueber das sogenannte Klippel-Feilsche Syndrom). *Arch f orthop Chir*, 1931, 111, 440.

After a detailed discussion of general theories regarding malformations of the spine and their genesis, the author presents an ontogenetic theory and a theory of the causal genesis of such malformations. These synostoses may represent arrests in development as well as fusions.

The author reports in detail eighteen cases of malformations of the cervical spine, and on the basis of drawings made from roentgenograms explains their classification according to one of the theories.

For the Klippel-Feil syndrome the fusion of malformed vertebrae is essential. Simple synostoses of well formed vertebrae have nothing to do with it. The differentiation of the deformity from other malformations of the cervical spine is discussed and attention is called to the frequency with which the condition is confused with tuberculosis of the spine.

As a rule no special treatment is required for malformations of the cervical spine but occasionally measures to prevent an increase in associated curvatures may be indicated. In some cases of short neck it may be desirable to effect a cosmetic reduction of the muscle mass at the side of the neck. This can be done by means of the special collar incision described by Schanz. JUNGHAUS (Z)

Chandler, F. A. Lesions of the "Isthmus" (Pars Interarticularis) of the Laminae of the Lower Lumbar Vertebrae and Their Relation to Spondylolisthesis. *Surg, Gynec & Obst*, 1931, 51, 275.

The author bases his discussion of lesions of the lower lumbar vertebral laminae on a review of the literature, a study of fetal spines, and eighteen cases of such lesions which he reports in detail. He applies the term "isthmus" to the interarticular portion of the neural arch. He believes that solution of bony continuity at this point is more common than has been recognized. A developmental origin has been claimed for such a cleft, but the author's study of fetal spines showed a single osteogenic center for the isthmus instead of two centers and did not support the developmental theory. The incomplete fissure occasionally seen in roentgenograms suggests

defective ossification, but complete division with separation of the fragments must be attributed to trauma. The latter type of lesion may be diagnosed clinically and by the proper interpretation of good lateral roentgenograms. Fractures of the isthmus are frequently complicated by spondylolisthesis.

In conclusion Chandler states that in selected cases complete fusion of the lower lumbar spine and sacrum will restore stability and relieve the symptoms. WALTER P. BLOUNT, M.D.

Rocher, H. L., and Roudil, G. Sacrococcygeal Malformations, An Anatomoclinical Study and an Attempt at Classification (Malformations du sacro coccyx. Etude anatomique et essai de classification). *Rev de chir, Par*, 1931, 1, 299.

Two main types of sacrococcygeal malformations are recognized—those accompanied by marked malformation of the pelvis and leg and usually by disturbances of the sphincters which can be recognized by clinical examination, and those characterized by a small lesion which causes no trouble and is found only accidentally on roentgen examination.

The authors report six cases representing the following malformations:

1 Total sacrococcygeal aplasia accompanied by lesions of the pelvic girdle, legs, and sphincters and easily identified with the aid of roentgenograms.

2 Subtotal sacrococcygeal aplasia accompanied by complex lesions of the spine and by sphincteric disturbances.

3 Hemiatrophy of sacral vertebrae, a unilateral malformation involving several vertebrae which is accompanied by minor cord lesions but not by sphincteric disturbances and is most often found by roentgen examination.

4 Total or partial aplasia of the coccygeal segments without clinical symptoms which is found on roentgen examination.

The detailed case reports are supplemented by outline drawings of the roentgen features and followed by a discussion of the embryological development of the spine in each of the conditions described. KELLOGG SPEED, M.D.

Sæur, Osteomyelitis of the Hip (Osteomyélite de la hanche). *Rev de chir, Par*, 1931, 1, 377.

This report is based on forty nine cases of osteomyelitis of the hip which were treated on the orthopedic service of the University of Iowa. In seven cases there was a history of trauma. Various organisms were found, but the staphylococcus predominated. The condition becomes less frequent with age and is rarely seen after the twentieth year. It often follows an acute infectious disease.

Sæur inclines to the opinion that the disease is the result of a septicæmia. The exact site of origin of the process cannot be determined. Three main types are recognized: (1) infectious synovitis of the hip, (2) infectious bony coxitis beginning in the head of the femur, and (3) true osteomyelitis beginning the diaphyseal side of the epiphysis and spreading

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injured in sports and treated surgically, 70 per cent were able to take up the same sport again. Konjetzny obtained very good results in 28 per cent of his cases, good results in 48 per cent, and fair results in 23 per cent. Thomsen had poor results in 73 per cent. Lowe had good results in 40 per cent, fair results in 52 per cent, and poor results in 8 per cent.

4 **Meniscus ganglion** This condition is unusual, but not extremely rare. The first case was reported by Ebner in 1904. In 1928 Bristow collected about 30 cases. The author has operated upon 3 cases. The etiology and histology are similar to those of carpal ganglion. The site is always the peripheral margin of the meniscus. The symptoms are usually slight, but in some circumstances may become sufficient to induce the patient to seek operation. Restoration to normal requires, at the most, two months.

5 **Injuries of the crucial ligaments** The author reports his experiences in 50 cases. Most of the patients were about twelve years old. As a rule, the anterior ligament is the one injured, and in the majority of cases there is an associated injury to the medial meniscus. The mode of origin is approximately the same as in injury to the medial meniscus. The click of the tear is often audible. As a rule there is hemarthrosis. In most cases the "drawer phenomenon," *genou a ressort*, *genou à tiroir*, is present. Small tears heal, but absence of subjective symptoms is rare. Bircher, Perthes, Putti, Fisher, Witteck, and others regard injury to the crucial ligaments as a severe knee joint injury. The symptoms may become so unbearable that the patient will demand arthrodesis. In recent years active therapy has become more and more favored. With regard to the operative methods and the indications the author cites Payr, Perthes, Witteck, Bircher, and Lange.

6 **Hoffa's disease, infrapatellar synovitis** Hoffa's report of this condition was published in 1904, but the disease picture was described earlier, by Annandale in 1887 and by Allingham in 1889. This disease is probably caused by trauma, hemorrhage into the plicae alares, and gradual transformation to chronic hyperplasia of the synovial membrane. Hydrops is added to the picture, and ultimately incarceration pains develop. Bircher found Hoffa's disease only 13 times in 250 arthrotomies on the knee. Its treatment consists in partial synovectomy and excision of fat.

7 **Loose body** Loose bodies in the joint are considerably less frequent than meniscus injuries. They occur also in arthritis deformans, osteochondritis dissecans, and osteochondromatosis capsularis. The author cites the article by Kappis entitled "The Structure, Growth and Origin of Joint Mice" (*Archiv f. klin. Chir.*, clvii). Loose bodies in the joint and arthritis deformans form a vicious circle. In advanced cases it is difficult to say which is primary. Osteochondritis dissecans is a non-infectious knee process, the basic cause of which is not known with certainty, as is evident from the variety

of names applied to the condition—osteochondrolisis traumatica, aseptic necrosis of bone and cartilage, malacopathia, and partial necrosis of the epiphysis. The name "osteochondritis dissecans" originated with Koenig in 1887. By some, a pathological predisposition is assumed. The author refers to Hansson's report in 1929 before the Northern Orthopedic Congress in Oslo, to Loehr's report from the Kiel clinic for the period from 1914 to 1928, to Staa's statistics from the Rostock clinic, to Mueller's "Biology of the Joints", and to Fisher's "Chronic Arthritis" which was published in 1929. At all operations necessary manipulations must be carefully avoided. Operation in the "demarcation stage" promises the best results. Osteochondromatosis capsularis is characterized by gradual growth, primary development outward of the joint from the synovial membrane, and the formation of a large number of osteocartilaginous bodies. In the folds of the synovial membrane are found bodies up to the size of a pea and also "collections of stones as in a gall bladder" numbering up to 100 (Kienboeck, *Fortschr. Roentgenstr.*). The treatment consists in arthrotomy and extirpation. Recurrences may develop slowly.

8 **Chondromalacia patellae** Our knowledge of this disease we owe to Buedinger (1906), Laewen, Fruend, Weichselbaum, and Aleman (*Acta med. Scand.*, 1928, lxxv). The causes of the condition are unknown but are probably a trauma in childhood and diminished resistance of the tissues. Cartilage lamellae can sometimes be demonstrated in the field of knee puncture. Operation is done only in severe cases. In the others, the treatment should consist of conservative measures such as puncture, the application of a plaster of Paris cast, and heat. Transition into arthritis deformans is frequent.

9 **Johansson-Larsen disease** The first report of this condition was made before the Northern Orthopedic Congress at Helsingfors in 1921. The disease represents an anomaly in ossification at the tip of the patella in children between eleven and fourteen years of age and is sometimes confused with fracture (patella bipartita). The anomaly constitutes a counterpart of Osgood-Schlatter disease of the tuberosity of the tibia. The cause is usually a trauma in youth. The treatment recommended is the application of an ambulatory plaster cast over the knee.

GERLACH (Z)

Fredet, P. **Stieda's Disease** (*Sur la maladie de Stieda*). *Bull. et mem. Soc. nat. de chir.*, 1931, lxxv, 1943.

Mauclair described the condition known as Stieda's disease as an ossification in the internal lateral ligament of the knee at its upper extremity which is due to trauma. Cases have been recorded by Stieda, Vogel, Preiser, Ewald, Pelligrini, and others. The author reviews twelve cases which he collected from various sources in Paris. The knee is generally slightly flexed and held in a valgus position. The roentgenogram in the anteroposterior axis

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Twenty t c es report d n d t l

KELLONG S MD

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Krukenberg operated with good results nine years after the injury

As attention must be paid to the patient's mental attitude, it is advisable to see that he has working companions at the cripples' home

In the cases of persons who are blind, the operation should not be undertaken. The epiphyses are removed only when the entire forearm stump is preserved. In the cases of young persons little bone is resected above the epiphyses as the stump without the epiphyses grows poorly. The long tongs are no hindrance

Only the flexor digitorum profundus muscle and the thumb muscles are excised. In the author's opinion the procedure of Latowski with removal of all muscles, that of Putti which leaves the bones short, and reconstruction of lower joints are unsuitable. If the incision is made far enough toward the ulna, primary covering of the radius can always be done. The skin defect over the ulna is covered with a pedunculated abdominal flap which is divided on the twelfth or fourteenth day. The author considers unnecessary the two stage division of the skin flap on the twelfth and fourteenth days which is recommended by Flockmann

The after-treatment is begun fourteen days after the operation with galvanization by means of Leduc's interrupter followed by active exercises

The gripping function is not a simple hinge movement of the radius against the ulna, but is combined with pronation and supination movements. According to Krukenberg, adduction is brought about by the biceps, pronator teres, flexor carpi radialis, and radial half of the extensor digitorum sublimis, abduction by the supinator longus, extensor carpi radialis, and extensor digitorum communis, supination, by the supinator longus and supinator brevis, and pronation, by the pronator teres. In the author's cases good closure of the tongs at the tip was always obtained even when the elbow was extended. In only two cases did a secondary osteotomy or osteoclasis of the radius prove necessary. With the tongs open to the widest extent, the angle should be at least 30 degrees. The author obtained an angle up to 50 degrees. In the use of the tongs not only a strong muscular action but also a fineness of the skin of the stump is important. Wolff's investigations showed that sensitiveness is greatest at the tip of the tongs and decreases gradually with the distance from the tip of the stump. The intact limb at the level of the stump was less sensitive than the stump. The transplanted abdominal skin is more sensitive than the skin which belongs to the stump

Schnepe says that patients operated on unilaterally and having one normal hand do not need a prosthesis, but those who have been subjected to amputation of both forearms should be supplied with a prosthesis on one side. Suitable and actively movable models have been devised by Krukenberg, Biesalski, Fraenkel, and Scheel. A prosthesis is inferior to the Krukenberg tongs in functional capacity and is more for cosmetic purposes

The functional results of the Krukenberg operation are excellent. The patients are able not only to carry on the ordinary activities of daily life with the hand, but also to work at trades almost as well as with a normal hand. Even persons who have undergone a double amputation can attain full capacity for work with the Krukenberg tongs, as Ray demonstrated in the case of a cabinet maker. The Krukenberg hand gives the person with an amputated forearm both full working power and new courage for life and makes him a useful member of society

ENGEL (Z)

Gatellier, J., and D'Aubigné, M. Arthrotomy on the Hip by a Modification of the Ollier Procedure (L'arthrotomie de la hanche par le procédé d'Ollier modifié) *J. de chir.*, 1931, LXXXIII, 24

The arthrotomy described by the authors is for use in pseudarthrosis of the neck of the femur. In the Ollier method, the hip joint is approached by means of a curved incision made around the greater trochanter while the leg is held in flexion at 135 degrees and in adduction. Resection of the greater trochanter and its attached muscles then follows. The authors modify this procedure by carrying the limbs of the "U" incision higher and reflecting with the cut-off trochanter all of the upper portion of the frequently thickened capsule of the hip joint. This permits an excellent view of the joint and avoids the necessity of cutting muscular or ligamentous structures deep in near the hip. The technique is described in detail and shown in schematic drawings

The approach to the hip joint having been completed, the limb is brought further into adduction and the upper surface of the neck and the head of the femur are examined for fibrous union or non-union of the neck and to determine the position and state of nutrition of the bone fragments

If pseudarthrosis is found the surface is excised and freshened back to properly nourished bone, a bone graft from the tibia is driven through the trochanteric portion into the head, and osteoperiosteal grafts are packed about the freshened fracture site at the neck after the leg has been extended and abducted. The reflected trochanter is then brought back into place and screwed on solidly. The wound is closed and continuous extension in traction is used to hold the reduction

In the handling of the patient after the operation great care is necessary to avoid breaking the graft which crosses the neck

In cases in which the head will not take a transplant on account of fragmentation or a poor state of nutrition, Whitman's reconstruction operation is performed

Four weeks after the operation the patient is allowed up in a short plaster-of-Paris dressing which holds the limb abducted. If bony union is desired after an operation which leaves the head of the femur *in situ* the postoperative immobilization is continued for from three to six months

KELLOGG SPIED, M D

Magnus Trauma and the Spinal Column (Trauma und Wirbelsäule) *II Unfallheilk.*, 1931, viii, 31, 59

This is the report made by Magnus before the Deutsche Gesellschaft fuer Unfallheilkunde on traumatic injuries of the spine which had come under his observation during the previous sixteen months in hospital and clinic practice and in examinations in compensation cases. After the exclusion of all doubtful cases it was found that 608 persons with fractures of vertebral bodies had been observed. In 510 cases only 1 fracture had been sustained, in 93, 2 fractures, in 2, 3 fractures, and in 3, a luxation. The report is therefore based on a total of 705 spinal injuries.

The distribution of the injuries was the usual distribution. The first lumbar vertebra was involved in 193 cases and this vertebra and its two nearest neighbors were involved in 431 cases, almost two thirds of the total number. The most frequent combination in the 78 double fractures of adjacent vertebrae was the twelfth thoracic and the first lumbar vertebrae, which occurred in 29 cases. Next in frequency was fracture of the first and second lumbar vertebrae, which occurred in 13 cases. In the 15 cases in which the fractured vertebrae were not adjacent, no one combination occurred with special frequency. Of the triple fractures, 1 included the twelfth thoracic to the second lumbar vertebrae and the other the first to the third lumbar vertebrae. In the great majority of cases the mechanism was wedge-shaped compression with the narrow edge of the wedge forward.

Paralysis occurred in 109 cases—91 of single fracture and 15 of double fracture. From this fact it appears that double fracture is not necessarily associated with greater danger of cord involvement than single fracture or simple luxation. The incidence of paralysis was highest in the cases of injury of the first lumbar vertebra. Of the 56 patients with complete paralysis, 7 died within a short time, 34 remained permanently paralyzed, 7 showed considerable improvement, 5 ultimately showed only traces of the paralysis, and 3 were completely cured. Of the 37 patients with incomplete paralysis, 23 showed no improvement, 3 showed improvement, 1 was almost cured, and 10 were completely cured. Of 7 patients with isolated paralysis of the bladder and rectum, 5 were cured. The 1 patient with paralysis of only the rectum showed no improvement, whereas of the 8 patients with paralysis of only the bladder, 3 showed no improvement and 5 were cured.

Magnus emphasizes that all improvements and cures occurred spontaneously. He states that he has not yet been able to persuade himself to operate on a vertebral fracture with the object of removing or improving nerve symptoms. He assumes that in cases capable of improvement the symptoms are due, not to lesions of the cord, but to hemorrhages into the cord substance or oedemas, resorption of which is followed by the re-establishment of free conduction. Autopsy studies have convinced him that injury to the cord by the fragments of a vertebral fracture cause permanent paralysis which cannot be corrected

by decompression trephination, and that in cases susceptible of improvement retrogression takes place without operation. In the treatment, interest is centered on the bladder since most of the complications and dangers are to be expected from this source. The author cites publications by his assistant, Hansen, who has discussed in detail the urology of spinal fractures with paralysis. The paralysis of the internal sphincter and exposure to view of the posterior urethra and colliculus seminalis which were observed by Schramm were found by Magnus in all of his 44 examinations. Magnus holds that they are positive proof of vesical paralysis originating in cord injury and that their absence is of value as a negative sign.

The author refers briefly to the so-called inflammatory stones in the bladder. He states that these are exclusively primary vesical stones, i.e., incrustations of cast off gangrenous mucous membrane.

In contrast to the poor results in cases of paralysis, the end-results in cases of simple fracture of the spine are encouraging. Magnus limits his discussion to 202 cases treated at Bergmannsheil. The average duration of illness was sixteen and nine-tenths weeks and the average disability compensation at the time of the patient's discharge was 45 per cent. After one year the average disability compensation of those who were re-examined was 38.3 per cent, after two years, 29.7 per cent, and after three years, 22.7 per cent. However, these figures are too unfavorable for after the first year the patients who no longer received compensation were not summoned to the re-examinations and hence did not influence the average figures.

In the treatment, the patient was kept flat on his back and given massage from the third or fourth day until the end of the fourth week. Then, for two weeks, he was given exercises in bed. At the end of the sixth week he got out of bed. No plaster bed, extension, or reclination was included in the treatment, and no attempts were made forcibly and purposely to disturb the impaction of the fracture that is so necessary for healing. Magnus states that there is no danger that loosening of the impaction will occur accidentally during the first few days when the patient is being changed and cause paralysis secondarily. The treatment described affords favorable conditions for function, prevents atrophy of the muscles of the back, and favors healing of the fracture. Magnus regards it as incorrect to assume that the conditions for healing are particularly unfavorable in fracture of the body of a vertebra. He states that this error has led to corset treatment and to keeping the spine immobilized and free from weight-bearing for years and has often resulted in crippling. Von Brunn gave up ordering supporting apparatus many years ago and now in the Ruhr coal district hardly any patients wear corsets. When patients wearing corsets come from other districts for treatment or for compensation decisions the difference between them and the patients treated in Bergmannsheil is always striking. The patients coming

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FRACTURES AND DISLOCATIONS

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L t o n M D

tion with resorption of the necrotic tissue and replacement of the latter by new bony tissue

In seven cases of fracture of the femur reported by Freund the roentgenograms showed more or less complete necrosis of the neck of the femur with pronounced coxa vara and osteoporosis of the head manifested by areas of decreased density. Cases in which the round ligament and blood supply remained intact showed definite areas of reorganization and absorption of the necrotic bone with substitution of new bone trabeculae. The new bone formation began at the site of insertion of the round ligament and gradually invaded the medullary portion of the neck of the femur. In cases in which the round ligament was destroyed but the superior and inferior cervical arteries remained intact the absorption of the necrotic bone and the production of new bony trabeculae originated in either the medial or the lateral aspect of the neck of the femur and tended to spread toward the distal fragment.

The author is of the opinion that the histopathological changes observed by him in aseptic necrosis are closely allied to those shown in the roentgenogram in Perthes' disease.

The seriousness of the effect of the nutritional disturbances upon the head of the femur is dependent upon the age of the patient. Young persons are able to overcome the effects more readily than old persons.

The diagnosis of aseptic necrosis is of considerable practical importance. Without doubt, the nutritional disturbances in the proximal fragment in

fractures of the neck of the femur favor the formation of a pseudarthrosis. Consolidation of the fragments is impossible without a prodigious formation of medullary callus on the part of the distal as well as the proximal bone.

In cases in which internal fixation of the fragments was done the outcome was invariably unfavorable. Instead of favoring consolidation, this fixation provoked resorption without organization of the necrotic femoral head.

S. L. GOVERNALE, M. D.

Lantzounis, L. A. Derangement of the Menisci of the Knee Joint. A Report of an End-Result Study of 142 Cases Treated by Operation. *Surg., Gynec. & Obst.*, 1931, lxx, 182.

Of 142 operations for mechanical injury of the menisci of the knee, 85 per cent gave excellent results and 15 per cent gave good results. In 19 cases the lateral meniscus was involved. Locking occurred in only 56 per cent of the cases. Removal of the anterior three-fourths of the affected cartilage was done routinely. The remaining one-fourth did not prove an important cause of recurrent symptoms. After removal, apparently normal menisci frequently showed a tear of the posterior half or extensive injury of the tibial surface. In 54 cases a meniscus was found to be untorn but hypermobile, and relief of symptoms followed its removal. The hypermobile cartilage must be considered a clinical entity. In no case was there an infection of the knee joint or increased instability of the knee following the operation.

WALTER P. BLOUNT, M. D.

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sions are the peripheral nerve-block and the diathermy tests. In organic obstruction the aims of treatment are to increase collateral circulation, relieve pain, and remove dead parts of the limb by amputation. In spastic occlusions, relief of the spasms by physical means, drugs, and sympathectomy is indicated.

The author emphasizes that cases of organic and spastic vascular occlusion are not strictly medical or surgical and that therefore the best results in their treatment are obtained from the combined efforts of a group clinic.

CARL R. STEINKE, M.D.

Nystrom, G. The Trendelenburg Operation for Pulmonary Embolism (Die Trendelenburgsche Operation der Lungenembolie). *Nord med Tidsskr*, 1931, 1, 209.

In the year 1908 the report of Trendelenburg on his operation for pulmonary embolism at the Surgical Congress in Berlin aroused great hopes, but for several years thereafter not one life was saved by embolectomy. The first case of survival after the operation was reported by Kirschner in 1924. In the period from 1924 to 1930 several other cases were reported. Six patients were able to leave the hospital as cured. Kirschner reported one case in 1924, Meyer, one in 1927, Crafoord, two in 1927, Nystrom and Meyer, one each in 1928, and Nystrom, one in 1929. No doubt, attempts at embolectomy were made more often than reported.

The results of an occlusion of the pulmonary artery may vary considerably. Death often occurs suddenly or in the course of a few minutes. In other cases it does not occur until after five minutes, and in half of the cases, until after more than ten minutes from the beginning of the attack. This difference depends upon the mechanics of the embolic occlusion. If the catastrophe occurs suddenly any operative intervention is useless. It is difficult to determine the limits of operability. In the operation of Trendelenburg the pulmonary artery together with the aorta is constricted by means of a tube. Trendelenburg has given forty-five seconds as the longest period of occlusion, but this time was soon extended to one hundred and four seconds. In the author's two cases in which recovery resulted the duration of the occlusion was respectively one hundred and four and one hundred and five seconds. The arrest of the circulation produces irreparable damage in the respiratory center sooner than in the heart.

The effects of interruption of the circulation upon the brain also vary considerably. In Kirschner's case with recovery, unconsciousness with delirium and coma lasted for over four days. Meyer, Krueger, and Crafoord observed similar conditions with disorientation, vomiting, amaurosis, and amnesia. Of great importance for recovery are the age, the general condition, the severity of the degeneration of the heart, the extent of the infarcts, complicating pneumonia, and several other factors. The length of time between the beginning of the attack up to the beginning of the operation was also very differ-

ent. The operation was never carried out unless death seemed unavoidable or all signs of life had disappeared. Some of the patients who might possibly be saved by the operation may die because the indications are too strict, but in the presence of such a doubtful prognosis the surgeon should be conservative until more experience has been gained. The chance of a good result from the operation is offered when the patient is young or at least is not old, the general condition is not too much affected, the attack is produced by a massive embolus not preceded by extensive infarct formations in the lung, and the occlusion is not so sudden or so absolute that death occurs immediately. It should be borne in mind that mistakes (cardiac insufficiency and uremic attacks) have occurred in the diagnosis of pulmonary embolism.

In regard to the operative technique, the author refers to his detailed report with illustrations in the *Annals of Surgery*, 1930, vol. 4. The exposure of the pericardium is usually extremely difficult. The intentional opening of the pleural cavity according to the method of Trendelenburg has been abandoned. An attempt should be made to reach the pericardium extrapleurally through the anterior mediastinum. The author warns against underestimating the difficulties of this procedure. He has proposed the resection of a part of the fourth rib in addition to that of the second and third ribs. After the opening of the pericardium, the tube is placed around the pulmonary artery and the aorta. The opening in the pulmonary artery should be about 1.5 cm. long. The constriction should not be too tight as it has been known to cause perforations and ruptures in the posterior wall. Autopsy in such cases has shown that a new vessel occluding thrombus developed at that site and led to death secondarily. The sites of suture were free.

A careful study of the anatomical conditions is necessary. Mistakes such as opening of the aorta instead of the pulmonary artery have occurred. The excision of the thrombotic masses is done with the forceps devised by Trendelenburg. Difficulties are occasionally encountered in the introduction of the forceps into the mouth of the left branch of the artery. Often the thrombotic masses are so soft and loose that they cannot be removed with the forceps. The remaining masses then usually cause death. An attempt has been made in such cases to remove the masses with a suction apparatus. This procedure gave the author excellent service in one of his cases which ended in recovery. Extraction as suggested by Trendelenburg has been done successfully in isolated cases, but has also sometimes failed.

As soon as the arterial opening has been closed with clamps and the tube is removed, the main problem is to bring the heart and respiration into action again. A slight pinch with the little finger is usually sufficient to produce contractions. Massage of the heart is dangerous because it may easily cause ruptures (fatty heart). Injections of 1 c.c. of

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

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Serial sections were made of three sub uterine arteries excised in a case of periarthritis nodosa in girl of fifteen years who had been under treatment for five years. The arteries were not found to be dilated arteries and the pathological changes were limited to a small area and the intima adherent to the vessel wall. Histological call the periaortitis was permanent consisted of chronic inflammation with occasional lymphocyte infiltration. The ad intima showed subintimal fibroblast proliferation while the muscle cells of the media were necrotic. Having a granular cytoplasm and coagulation necrosis and nuclei which stained poorly than only the nuclei of the blood vessel all died to weaken. In the artery blood resulted in aneurysmal dilatation. The local findings and the history of the case suggest limitation of the pathological changes to the cutaneous arteries.

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with injured intestinal nerves the corrosion of vessels were examined histologically in nine, twelve, fourteen, forty five, sixty and ninety days after the operation.

On the basis of the experiments and a review of the literature, the author concludes that the endotracheal intubation and the nasal pathologic anatomical changes of the vessels in the constrictor muscle affect the function of the vessels. The pathologic changes are produced by vasomotor disturbances and disturbances of trophic innervation of the vessel about the peripheral environment. Histological changes in the vessels begin to develop a few days after complete interruption of the respiratory process and substantially later, slowly progressing process and symptoms of hyperplasia of the endothelial cells degenerate manifestation and dissolution of the trophic and metabolic processes.

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SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE, POSTOPERATIVE TREATMENT

Horsley, G. W. The Behavior of Alcohol-Preserved Fascia Lata of the Ox, Autogenous Fascia, and Chromicized Kangaroo Tendon in Dog and in Man. *Ann Surg*, 1931, **XCIV**, 410

Horsley reports experiments on dogs in which the behavior of autogenous fascial transplants, fascia lata of the ox, and chromicized kangaroo tendon in the peritoneal cavity and the abdominal wall was compared. The three types of suture material were placed loosely about the small bowel, tied snugly about the pylorus, and placed in the abdominal wall in apposition to fascia and muscle. Thus their action in a normal environment next to muscle and tendon could be ascertained and compared with their action in the abnormal environment of the peritoneal cavity. The amount of relaxation was determined by putting the suture material under tension in attempting to occlude the pylorus.

Following this experimental work on dogs, closure was effected with alcohol preserved fascia lata of the ox or autogenous strips of fascia lata in five operations performed in clinical cases.

The observations made in the experiments on animals coincided largely with those of Koontz. In the peritoneal cavity and the abdominal wall of the dog the two types of fascial suture reacted similarly. Neither became encapsulated. Both atrophied and stretched in the abdominal cavity and neither atrophied nor stretched in the abdominal wall. Kangaroo tendon soon became encapsulated and was absorbed more quickly in the abdominal wall than in the peritoneal cavity. It is much more satisfactory than fascia for occlusion of the pylorus, causes fewer adhesions and is highly resistant to infection. In the presence of infection both types of fascia are quickly broken down and absorbed.

In man autogenous fascia retains its strength whereas the preserved fascia undergoes quick absorption which results in postoperative herniation. Horsley suggests that the difference in the behavior of dead alcohol preserved fascia of the ox in the dog and man may be due to the fact that man is higher in the biological scale than the dog and the ingestion of beef by man may increase the rapidity with which foreign beef proteins are absorbed.

L. S. PLATT, M.D.

Ortin, G. L. A Clinical and Biological Contribution on Transplantation (Sobre practica y biologia de las plastias). *Med Ibera* 1931, **XX**, 213.

After discussing the literature on transplantation the author reports his own work in transplanting grafts from the sciatic nerve into the optic nerve in

animals and in transplanting segments or all of the cornea. The technique of his operations is described and illustrated with sketches. This form of transplantation requires very fine and delicate surgery.

Ortin found that only fresh living tissue can be used for transplantation. If possible, it should be taken at the time of the operation from the same individual. If this is impossible, it may be taken from a closely related individual of the same sex. It should be obtained from the same part of the body so that it will be of the same nature as the tissue to be replaced. If the surface to be covered is large, a number of successive grafts are preferable to one large graft.

As grafted tissue always undergoes some reduction in size even when it takes without infection, the graft should be made about a third larger than the surface to be covered. The edges of the graft must be carefully adapted to the bed. The edges of the graft and bed should preferably be cut at a right angle to favor their nutrition. Hemostasis should be practiced very carefully as hemorrhage injures the vitality of grafts.

After the transplantation the graft should be covered with gauze and the wound dressed every day with great care. Hot water should be used to keep the graft from sticking to the gauze and becoming displaced. Heat applied by means of compresses or electricity may be employed to produce hyperemia and improve the blood supply of the graft.

The graft in nerve tissue acts only as a guide for the growth of new tissue. The graft itself does not live and function. Heteroplastic grafts are generally cast off. However, they sometimes persist for some time, as in one of the author's cases in which a cornea transplanted from a chicken to a rabbit persisted for more than twenty-one days.

AUDREY GOSS MORCAN, M.D.

Briscoe, Sir C. The Mechanism of Inflation of the Lungs and the Influence of Deflation on Postoperative Complications. *Lancet*, 1931, **CCXVI**, 513.

Postoperative collapse of the lung is of four types: (1) a condition in which the lower part of the lung is more or less airless but there may be no symptoms, (2) simple deflation in which there is bronchial irritation with secretion, (3) massive collapse of acute onset with one or both lower lobes of the lungs airless and (4) massive deflation of one lung which is most frequently found in injuries and is not necessarily a postoperative complication. The author believes that the first two types are not uncommon.

The elasticity of the lung and rest tend to produce deflation. Livingston has shown that a change from the upright to the supine position changes the vol-

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the latter were susceptible, delicate persons who lacked resistance and were predisposed to shock. The lability of their circulations predisposed them particularly to fat embolism. In contrast to pulmonary embolism, adiposity and arteriosclerosis played no role in fat embolism. This fact may be explained in part by the earlier age at which fat embolism occurs. Generalized osteoporosis also is of no importance. This is not true, however, of localized osteoporosis following infectious disease, which is treated surgically.

In an experimental study of the quantitative relations in fat embolism, the author attacked the problem for the first time directly by making chemical analyses of normal lungs and lungs with fat embolism. In general, quantities of fat averaging from 4 to 5 gm and up to a maximum of 9 gm may be recognized by the pathologist in the sections, but clinically such quantities are not serious. Fat emboli of more than 9 gm may lead to the most threatening manifestations, but become the chief cause of death only when they are associated with external injuries to the respiratory or circulatory organs. The dissemination of from 12 to 20 gm of fat after a traumatic injury nearly always causes death by blocking the circulation. Determinations of the fat content of the blood during bone operations revealed slight elevations which remained within physiological limits. In average fat embolisms the free fat cannot be detected in the blood because it disappears into the capillary area. Determination of the fat content of the urine is not recommended as a diagnostic measure. In cases of fracture, it reveals only a slight elevation of the fatty acids, and after bone operations it shows even less significant changes.

The relationship of shock, hemorrhage, and fat embolism is evident from the fact that, of the 112 cases reviewed, only 2 were without evidence of shock. In shock, a large part of the circulating blood disappears into the reservoirs, the blood pressure sinks, and the pulse rate increases. The heart and the circulation are strained to the utmost. The condition is probably associated with a constriction of the greater as well as of the lesser circulations, constriction of the lung filter, and inadequate functioning of the reserve capillaries of the lungs. The possibilities of recovery depend upon the last factor. The injection of adrenalin has proved of value. It is obvious that at the moment of severe straining of the circulation the presence of even small quantities of fat may be serious. Respiratory obstruction from external causes such as chest contusions, compression of the lungs, intrapleural hematomata, pulmonary emphysemata, and damage to the cerebral centers regulating respiration and circulation have a similar effect. To these may be added depressing anesthesia and major shock inducing surgical procedures.

The therapeutic possibilities are as limited in fat embolism as in pulmonary embolism. Prophylaxis demands adequate splinting of fractured bones during transportation and the use of sedatives which

will not injure the respiration and circulation. During the first days only necessary operations should be done, and these, under local or gas anesthesia. In the attack of fat embolism the cyanotic phase should be overcome by elevating the blood pressure. The author suggests that perhaps ephedrin or ephedrin is preferable to adrenalin. DRUEGG (Z)

ANÆSTHESIA

Mekie, E. C. The Effect of Anæsthesia upon the Blood-Sugar Content. *Experimental Investigation Surg., Gynec. & Obst.*, 1931, III, 329

The author reports experiments on rabbits in which he studied the effect of anesthesia and traumatic shock on the blood sugar, the source of the increase in the blood sugar which is associated with shock, and the mechanism of the reaction. The anesthesia was induced with ether.

It was found that the hyperglycemia reached its maximum after a narcosis of from sixty to ninety minutes and that its degree was dependent upon the duration rather than the depth of the anesthesia.

Mekie concludes that the rise in the blood sugar was due to mobilization of hepatic glycogen and that the action of the ether was exerted directly upon the liver cells. GEORGE R. McAULIFF, M.D.

Kaye, G. Airways. *Ines & Anal.*, 1931, 4, 193

Of 105 deaths occurring as the result of the induction of anesthesia, 10 per cent were due to obstruction of the airways. This percentage is increased if cases of cardiac failure due to a relative anoxemia are considered.

Acute obstruction is associated with deep cyanosis and wide excursions of the chest. Even if the obstruction is relieved before death occurs, the damage to the cerebral centers from the profound anoxemia may be fatal a day or two later. Anoxemia may be produced also by the administration of a gas anesthetic without sufficient oxygen.

Chronic suboxemia may result from continued oxygen deficiency and terminate in death from cardiac or respiratory failure. When in such cases the heart was weak, the death is often presumed to be due directly to the cardiac failure, the prolonged anoxemia not being considered.

The glottic stridor which may occur during ether anesthesia is a reflexogenic condition and is often precipitated by an operation about the inguinal region. It produces a dangerous anoxemia. To terminate it, the administration of the anesthetic should be discontinued until it subsides and then begun again carefully. Forcing the anesthetic to overcome the spasm is dangerous.

Intratracheal anesthesia may cause respiratory spasm. This should be managed in the same way as the glottic stridor.

In rare cases a plug of mucus occludes a bronchus and precipitates cyanosis and anoxemia.

In the cases of patients with an unfavorable posture and those with obstruction of the airways by a

by mouth, rectally, or intramuscularly. From 1/6 to 1/4 gr of morphine and from 1/200 to 1/150 gr of atropine sulphate are given from one-half to one hour before the operation.

While amytal may be used in combination with ether, ethyl chloride, novocain, or chloroform, the author has found it to give the most gratifying results in nitrous oxide-oxygen anæsthesia for thyroid and tonsil surgery.

Amytal is contra-indicated in the cases of asthenic patients with hypotension, cases of hypertension, cases of diabetes, and cases of neck conditions with marked infiltration and œdema of the tissues outside of and within the throat causing dyspnoea.

The use of amytal when indicated relieves the patient of distress during the induction of the anæsthesia and lessens the amount of anæsthetic necessary.

GEORGE R. McAULIFF, M.D.

Moerl, F. Coramin in Severe Central Respiratory Paralysis After Avertin Narcosis (Coramin bei schwerster zentraler Atemlähmung in Avertinnarkosen). *Med. Klin.*, 1931, 1, 916.

The elective action of coramin on the centers in the medulla oblongata would seem to make it an appropriate remedy for disturbances of respiration in the course of avertin narcosis. When the author gave an intravenous injection of 5 c. cm. of coramin during deep avertin narcosis the patients frequently began to sigh and to cough and sometimes to move

their limbs. The effect of coramin was quite clearly evident in the following case.

A woman fifty years of age was operated upon for carcinoma of the breast under avertin narcosis in spite of the fact that she had bronchiectasis. During the preparation of the operative field she developed cyanosis. Although the administration of the anæsthetic was stopped, this became progressively more marked. During the cleaning out of the axillary space respiration became very superficial, the blood dark, and the pupils narrow and reactionless. Treatment with carbon dioxide under pressure was without effect, the frequency of respiration diminished and the pulse became imperceptible. At this critical stage 3 c. cm. of coramin were injected into the exposed axillary vein. Thereupon the respiration immediately became deeper, the pulse returned, and the cyanosis disappeared. The operation was then completed without further difficulty. When the patient was returned to her bed the critical condition recurred. Coramin was again injected and after two minutes the danger seemed over. However, a light cyanosis persisted and did not disappear on the administration of carbon dioxide. According to the advice of Seiffert, a venesection of 200 c. cm. was done and 500 c. cm. of salt solution containing 40 gm. of dextrose were given intravenously. The cyanosis then disappeared and after four hours the patient awoke without any harmful effects.

MANDRI (Z)

per cent in the hæmoglobin. The number of leucocytes later decreased somewhat, but there was never a leucopenia. The patients with primary tumors and cachexia reacted with loss of weight and diffuse dissemination of the carcinoma.

In the third week the skin reacted with distinct reddening. Moistening and vesicle formation occurred only occasionally. In controls the skin showed marked pigmentation but otherwise no reaction. The subcutaneous cellular tissue was somewhat firm and there were no ulcerations or necroses. Toward the end of the irradiation there was slight irritation of the bladder with tenesmus, hyperæmia, and œdema, but there was no ulceration or deposit of fibrin. The rectum showed a tendency toward tenesmus, diarrhœa, and the escape of mucus, but no permanent injury.

In the bones, muscles, and peritoneum there was no reaction.

The œdematous lymph glands on the pelvic wall, which mathematically received about 1,600 R, showed an initial swelling and hyperæmia with resulting painful pressure effects on the nerves, but gradually became smaller. Infiltrations ranging in size from that of a walnut to that of an egg sometimes disappeared so that patients with paralysis due to pressure became entirely asymptomatic. Larger infiltrations of the pelvis or the omentum may also recede, undergo abscess formation, or become resorbed.

The author believes that when the indications for the method have been definitely established and the technique has been perfected the procedure described will accomplish much which is not achieved by the usual methods. VON SCHUBERT (Z)

RADIUM

Goulston, D. A Biological Reaction to Scattered Radiation. *Med J Australia*, 1931, II, 74.

To determine the relationship of the size of the field irradiated to the effect produced, the author made a study on hen's eggs. Windows of varying size were cut in the shell and radium-containing needles placed across the opening. In the zone of the most intense irradiation-effect histological study showed atrophy of the ectoderm, mesoderm, and endoderm. Surrounding the area of atrophy there was a zone of hypertrophy. A series of experiments showed that the irradiation effect increased as the size of the opening in the shell was decreased and as the dosage was increased. The foci of maximum irradiation-effect were located, not immediately beneath the needle containing the radium, but parallel with the needle at the cut edge of the opening in the shell. The data suggested that the phenomena were due to irradiation scattered from the surface of the shell around the orifice. Thus scattering effect seemed to be increased when windows composed of elements of low atomic weight were used. C. D. HAGENSEN, M.D.

PHYSICOCHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

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Malanotic tumors of the skin may be divided into two main groups: benign pigmented lesions (nevus pigmentosus) and the melanomas (malignant). The subject of benign melanocytic nevi is the main theme of this paper. Benign melanocytic nevi are common skin lesions and are usually found on the face and neck. They are usually small, brown, and well-circumscribed. They are usually found in the dermis and are composed of nests of melanocytes. They are usually found in the dermis and are composed of nests of melanocytes. They are usually found in the dermis and are composed of nests of melanocytes.

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In the discussion of the primary tumor, the main focus was on the histological features of the tumor. The tumor was a well-differentiated adenocarcinoma, with glandular structures and a high degree of cellular atypia. The tumor cells were arranged in irregular glandular patterns, with prominent nuclei and abundant cytoplasm. The surrounding stroma was desmoplastic, with a dense fibrous reaction. The tumor was staged as T1N0M0, indicating a localized disease. The patient was treated with surgical resection, and the outcome was favorable, with no evidence of recurrence at the time of follow-up.

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MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Andrew E. Renwick, A. G. and H. Dina L.
T. Ca. at 110 of B. C. W. I. Infection in
Dog. The Infection (St. H. L. Extract
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The author found that septiceprosses may be
in the pelviche r. muscular tissues of
dogs by the injection of sterile bil. salt solution
of sterile extract. The infection is due to
bacteria which infect the tissue. The first
multiplication occurs in the tissue.

JOHN H. G. BLOCK, M.D.

D. W. H. Echthymococcus Alcol. with a Report of
Australian Case. J. S. & G. New Zealand
J. S. & G. 93. 15

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C. O. L. M. Foot Infection. J. P. D. L. G. L.
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Wilbur, D L, and Hartman, H R. Malignant Melanoma with Delayed Metastatic Growths. *Ann Int Med*, 1931, 1, 201

The authors review ten cases of malignant melanoma arising in the skin and the eye in which metastasis occurred from five to thirteen years after removal of the primary growth

Malignant melanomata may recur locally, metastasize to regional or distant lymph nodes, or metastasize throughout the body

Delay of metastasis must depend, not on altered transportation of the tumor cells, but on delay of the growth of the cells. The frequency of secondary involvement of the liver shows that the distribution of the tumor cells is very widespread

Unless the primary growth is in the eye or the brain, it is usually not of great clinical importance. Death results only after widespread metastasis

The treatment of malignant melanomata is unsatisfactory. These tumors show practically no response to irradiation therapy

HOWARD A. MCKNIGHT, M D

GENERAL BACTERIAL, PROTOZOAN, AND PARASITIC INFECTIONS

Raiga, A. Staphylococcus Septicæmia Cured by an Intravenous Inoculation of Bacteriophage (Septicémie à staphylococcique guérie par une inoculation intraveineuse de bacteriophage). *Bull et mém Soc d chirurgiens de Par*, 1931, LIII, 441

The case reported was that of a woman twenty-nine years of age in whom, following an operation for perinephritic phlegmon, there appeared a double infectious localization in the great venous trunks of both lower limbs which suggested septicæmia

The infection was cured in a few hours by a single intravenous inoculation of stock staphylobacteriophage. Later, there was an apyretic development in the left lower limb lasting for eighteen days

When ordinary therapeutic measures are used, the mortality of streptococcic septicæmia ranges from 80 to 90 per cent. In eight cases in which Raiga employed phagotherapy, six cures were obtained and the mortality was only 25 per cent. Raiga believes that the mortality may be lowered further if the treatment is used judiciously, that is if one attains in the living the three conditions considered by d'Herelle as essential for the production of the phenomenon of bacteriophagy *in vitro*. According to d'Herelle, the bacteria must be young, sensitive living, and normal, the strain of bacteriophage must be virulent, and the medium must be favorable

In septicæmia, the medium is the blood stream, but experience has proved to Raiga that this medium is quite often unfavorable. Hence bacteria which are lysable outside of the serum become resistant in it or a bacteriophage which is virulent outside of the serum becomes inactive in it. The blood serum is rendered unfavorable by the presence of antiphages. With the use of autohæmotherapy, Raiga obtained the disappearance of antiphages in 96 per cent of cases

Of 178 patients affected with recurring staphylococæmia, 97 (54 per cent) had been previously vaccinated, and of these 97 patients, antiphages were present in 87 per cent. This finding led Raiga to the conclusion that antistaphylococcus vaccination is inefficacious and sometimes dangerous

HAUTEFORT, who read Raiga's report to the Society, did not agree that vaccinothérapie is inefficacious

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BIBLIOGRAPHY of CURRENT LITERATURE

NOTE.—THE BOLD FACE TYPE IS IN BRACKETS AT THE RIGHT. A RE-EXAMINATION OF THE TYPE
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GENITO-URINARY SURGERY

Adrenal Kidney and Uter

Recr hypernephroma f thel f l mba egn with
hem t na f l l w e eph ect my S S A m r r
P l l R m 93 xx sec hi 44
P eph t l ues L G R i l d M H M A
Am J S R 93 459
R w f th mod m ept f th ph u l gy f
th kid y f p r v Bru lles m d 93 7
43 6
I tra ogr phy (l n u l t d y l W S P
J l mat J Med & S R g 93 1 4 6
I tra rogr ph f t d h l d n T
H L u d P J M R Am J D Ch 11
191 1 6
I l g r phy B T H l t r t P o c R y Soc Med
Lo d 93 493
I tra enou py l g r phy P Co s v r t e s c o J
d l m d t h 93 43
I tra pyelog phy with lectan. N Co
t v r e c K d h B h rest 93
4
Pr l red w m f l l w g py l graphy
D D Pr noc d I W M e s o L a t 93 c e r x
5 9
Co ge t l d f m t e s f th et d k d y I
Th l pel A T K A r d T l c n r
Zisch f r o l Ch 93 3
C sed n f e c t py D M e c A h t i d r o l
93 6 5
I th l g l d t n g t d p l t f th
k l n e y p e l d t e p o t f t l s e s A J
C w l R Th r s o C B S q r d B M
P m r So th M J 93 x 74
Acquid l d y t p m b l k i e y F k
J U r o l 93 x 3 7
Nephrop t i d i a g n o s i t e a t m t J J C r
C l l r n & West M d o
Th rad g r p h d i a g n f h r e s h o e k i e y t
e s e s d i a g n o s e d b y t r a g r p h y D L A l
Arch d med rug y p e c l 93 4 753
Operat h r e s h k d v s x r Z e t r l l
f Ch e 93 p
Ch g e s h b y d m p h r o t s a f l l w g l g t f
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Nephrop l i t d p y l e p h n t b a t d i t
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R n a l t b e r c u l o s w i t h t u l y m p t m s S v r v
u d T f x L y o h 93 460
Th d i a g n o s i t l l b a c e s f l n g i A B k
M J d r o l m e d z h 93 x
M l p l c y s l l e u l t h l f k l n e y w i t h b a t r u
t t h t p e l t a d m l t p l t
l e u l t h l i d f b o y f f y r e C J T m s
d F C R J L a 93 l 538
Th p y l g p h f g n o s i t h d t f c y s t l t h k i e y
L A c o l l l l M r z k m d l a t A m
93 x 451
H y d a t e d c y t f t h k i e y A t r e R l
r u g d B r e l n a 93 l 388
f l y c t k l l e y s A R z e New Eng J Med
93 x 43
T m o r s l t h k i e y L W r e n d H W F r s
A m J S u r g 93 u l 332

E a l d g n w i t h p l g r p h y f m l n a t t
l t h k i d y C r L y h i 93 u l 46
C r e m a f b o t h k i e y r e p o r t f a w t h e v e
f t h l t r a t m l l p l p m r y m l n t t m o
H L S r s r g G y n e c & O b s t 93 l u n 34
E m b r y f d m y s a m l f t h k i e y m a l u
R H J N w l g l d f Med 93 7
R e s e c t f t h k i d y A l R m r A m J S r
93 x l 565
I t t f f t r a p e t l e p h r e t m y A
G m e Z i s c h f l Ch 93 x x x
G h t w d o f t h t c a p o r t R M L x
C u r r J U r o l 93 x x 44
I t p t r a l p e g l s e f h h f t h t a g
d h y p o p l t k i e y C S S A E l l
Med 93 c v 47
C o t u c t f t h t e g y e c l g l l e s
W H e r c Z i s c h f l Ch 93 x x x J
U c r t l m f t h t A e p o r t l t h r e s e
H t B e J U r o l 93 5
Th t m t f f p a m l t h e t a n t f e n d
t b y m m r a k s x B t J U r o l 93
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O c l d g t r a l s t o k L S m J l a a
S t a t e M A 93 464
T s e s l m i g r a t g t l l e u l l u n f n d
p e t o c f r a t S R L A d o J d l m d t
h 93 x x x 63
M a s t t g r t h s t h t D W M K t
d M R r r r C d M A u J 93
E p m t r a p l t t I t r a n t t h v
t e s t u P N W L K T A t l & N
Z l d J S g 93 58
T r a n p l t a t t t h g m l p u r n l
w h o s k i d y w f t l e s P m r y r e c o e y
J M P e c A m J O u s t & C y n e c 93 413
U r t h m a n e p h e c t m y l l l c y M t L a r i
J U l 93 433

Bladder Uterus and Penis

C g t a l d f m t e s f t h l w r n r y t t A k
T m r l m e R y Soc Med Lo d 93
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F r o p h y f t h b l d t h t p t u e f t e
t r a t t h e c t m C C H G e O h S t M
J 93 7 5
A s e f r o r f t h r y b l d J S
M E A h C a a d M A J 93 324
F r e i g n b o d y t h n a r y b l d R L M k
d f l l G e d s t r e J M l Soc A w f r e y 93
700
Th r e p o r t f a u l l g n b o d t h f e r
b l a d f J O B New E g l J M l 93
47
Th p a t h w e C f y l g w i t h l f l m e s
f E r s t r A N O v a Z i s c h f r o l C P
93 x 1
E n c r u t e l y t W M K e d s M T
C J l l 93 495
A c a s e f o s t e r m l t e b a c e s w t h f l t t t e
n n a r y b l d e r A P J L f g e t l 4 5
A s e f l l t f t m a f m t h b l d e r
G k T l l u s M C a z f l l f
F p e e n e s w i t h t m o u t r e f t h l l
G C S a t t r f U r o l 93 435

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GENITO-URINARY SURGERY

Ad n i k i d n y and U t e r

Recurr t hypernephroma of th l f t i mbar egi w th
 harm t n f l l wing eph ect my S C c o a
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 l t p l a p h y P C S T A T E S C O J
 d l m e d t h 93 43
 I tra p y l g p h y w th r o l e c t a n C
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 4
 P r o l g e d a l a w o m f l l i n g p y l o g r a p h
 D D P r i n o c n d l W M m s o L a n t 93 t c x x
 59
 C t l d f m t e s f t h t d k i n y I
 Th r a l p e l s A T n d T I n n e
 Z u s c h f l Ch 93 x 3
 C e s s e d n a l e c t p y D M c t A c h t l d u r o l
 193 65
 l t h l o g i c n d t n g i d p l e t u f t h
 k d e y p e l s n d e t e p t f t l A J
 C r o w l l k T u m e s o C l l S e r t l B M
 I l a u S o u t h M f 93 x 74
 A q u e r e n l d y t p m h l k i l y F K
 J L o l 93 37
 N e p h r o p t o (d i g o s i f t m e t J J C n e
 C l l r o u s & W e s t M e d 93 x x
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 p h r o n y l t n d p s l e p h b a d t
 t r e t m t P P t c e t R g t m a s d c l
 l r o p 93 63
 R n a l t b e r u l w i t h t l v m p t m S T v
 d T x l L y h 93 x x 400
 Th d i a g n o s i s o f l d b e s e t a l r i g n A B x
 M f d r o l m a d t c h 3 x x
 M l t l e y i n c a l c u l t h f f e y w h b a t e u
 l t t h t r e p e l j u c t d m t p l e y
 l e u l t h t l d i s b y f f u s e c J J r
 d F C R x J L a n c 91 t 535
 Th e p s y l o g r a p h i c d x o t h y l j y t f t h k l y
 f A S c r l l l M K m e d l a t A m
 193 1453
 H y d t e y t s f t h k l y t r k f
 r u g d B a r c e l o n 91 345
 P l y c s c k l e v A R u l e v W E n d a n t J M e d
 91 475
 I m o r s f t h k n e y L W t u J H W F r
 A m J b r g 93 455

E a l y d i g n w i t h p l a p h y f m a l i g n a n t L m n
 f t h k d e y C r L y o c h i r 31 46
 C a r c o m f b o t h k d s e p o r t l e w b r e n e
 f t h l t t e m l t p l p m r v m l g n a t m e n
 H L S S r e G y n e c & O t t 93 h 350
 E m b r y o n a l t e n o m o s a r c m f t h k d e y
 R H J e k i s N w L d J M e d 193 c c v 4
 R e s e c t f t h k l y N l R a m c v A m J r
 93 505
 I d t u f t p e t e l e p h r e t c i A
 C y r o z Z u s c h f r o l C h i r 93 1
 G h t w o u d f t h e t p o r t P M L e
 C o a t e J L o l 93 x x 447
 E c t p c t l p e l n g b e e f h a l f o f t h e o e
 d h y p o p l a s t k l y C S S N e w E n d 3
 M e d 93 471
 C o n t c t f t h t i n g y e c l o n a l c o l u o n
 V H e x e c h Z u s c h f l Ch 93 x x 45
 D t e u l m f t h t r A e p o t f l e c a s s
 H C B J L l 93 x x 5 [51]
 Th t m t f p m f t h t l t e r d
 t b y m m u v g a h S x a B t J J L o l 93
 1 94
 O u d d g t l t s R L f m s J L a n d
 S t a t M A s s 93 x x 464
 T w c a s f m g r t g t l l e u r s
 p e r l u l r a l b R o l o n J r o l m f e t
 h u 193 63
 M t a l g w i t h t h e e t D W M K m
 d M R C d M A s s J 93 45
 E x p e r i m t l l p l t t e r s t l w
 t u n l N W x r t v i o r A t r a l f t h
 2 l d J S g 93 38
 T r a p l t a l f i n t t h g m d p l t
 w h o s t h k d e y w f t l e s f m r y r e c o r y
 J M P e A m J O b t & G y n e c 91 435
 J l r o h m e p h e c t m f y M t C m u l l
 J L l 93 433

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C g t l d e f r i e s f t h l w e n r y t r a t A R
 T m r s o P r o c R y Soc Med Lo 1 93 151
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 E x t r o p h y f t h b l a d h e p l a t t u n f t h
 e t r a t h e c t m C L l s O h s 3 M
 J 93 5
 A s e t t e m f t h m a r y b l l l J S
 M E a c h C a d M A s s J 93 x x 44
 F e n b o d y t h r y t l d d e r K L M k i t
 d H H G o l d t r J M e d Soc N J t e y 93
 709
 Th r e p o r t f l f g n b o d t t l e m a s
 b l a d d f f O B N w t f l f M e d 93 c r v
 47
 Th p h o r e c f t h o h l i n m e n e
 f E x t r o n l N C f w h f l C f
 93
 E n r u e d y W t k f M T
 f l l 4
 A s e f c o m p l t m e s h u l a t t
 m a r y b l d A f l l 35 43
 A s e o f h t u a l f r f l b l a d d e r
 G F T u l h a M l a s
 F r e n c e s f t h m u t f t b l a d
 C C S m J L l 3

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SURGERY OF THE BONES JOINTS MUSCLES TENDONS

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T b o n E t c

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S r g 93
C y s t o s t e t c u e d w o t e g n d t S
F l y o p h a r a l 93
C u g l y p h f t h b e s t h f t y l l f
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INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Rugg-Gunn, A. Contact Glasses *Brit J Ophth*, 1931, v, 549

Contact glasses have been made with increasing success since 1827. Zeiss now makes a ground contact glass, and Mueller a blown model. In the application of the former, normal salt solution is introduced between the cornea and the glass, but in the use of the latter no liquid is necessary.

The author describes the methods of introducing the glasses and discusses the physiological optics of contact glasses of various types. In addition to conical cornea, the use of contact glasses is warranted in albinism (in which the lens may be tinted), phlyctenular keratitis, and many other corneal conditions, and in irregular astigmatism. In early cases of squint fusion may be obtained by the use of contact glasses with a prism.

SAMUEL A. DURR, M.D.

Albrich, K. Tuberculosis of the Eye (Die Tuberkulose des Auges) *Otoskepsis*, 1931, vii, 41

The author discusses the current theories regarding tuberculosis of the eye. The frequency of tuberculous diseases of the eye is shown by a few statistics. Of 245 diseases of the eye, 20.8 per cent were tuberculous. If the cases with cataract and traumatism are subtracted, the figure is increased to 36.4 per cent, and if only cases with iridocyclitis are considered, it rises to 53 per cent. In persons with pulmonary tuberculosis simultaneous tuberculosis of the eye is rare. This is especially remarkable because in Europe the most common diseases of the eye are of a scrofulous nature. It may be explained by the assumption that, as a result of these light forms of the infection, there develops in early youth an allergic condition which lasts for years and protects from the severe forms of tuberculosis later.

The eye tissue most frequently affected is the uvea, in which all forms of tuberculosis may develop, from the smallest foci of infiltration up to the clinical

picture of tuberculous panophthalmitis. Even these forms are seldom associated with pulmonary foci. Tuberculosis may attack all of the tissues of the eye, but it is characteristic that recurrences always develop in already diseased tissues. The benign forms of scrofulous diseases of the eye as well as the severe destructive forms appear chiefly during youth.

The immunological conditions of the tuberculous focus in the eye can be explained by Ranke's theory. In the primary infection with the tuberculous virus that is, before the powers of resistance of the organism have developed, malignant tuberculous proliferations appear, in the state of tuberculous allergy, scrofulous inflammations are common, and, finally, in the presence of sufficient protective powers, only non-reacting nodules in the iris and conjunctiva are demonstrable.

Tuberculosis of the eye requires, in addition to specific tuberculin therapy, the same general treatment as tuberculosis of the lungs.

NIKOLAUS BLATT (O)

Castroviejo, R. Epibulbar Nævocarcinoma with Extensive Invasion of the Cornea (Nævocarcinoma epibulbar con invasión extensa de la córnea) *Med Ibera*, 1931, vi, 305

The author believes that much of the difference of opinion which exists with regard to epibulbar nævocarcinomata is due to failure to study the neoplasms with sufficient care, especially by histopathological methods. It is generally agreed that neval neoplasms are polymorphous in structure. They are considered to be melanosarcomata, sarcomata, epitheliomata, or mixed tumors, depending upon the character of the predominating tissue. Tissue cultures indicate that the characteristics of any hyperplastic tissue depend upon the nature of the tissue in which it grows. In cultures, all tissues gradually lose their specific character while multiplying indefinitely, until their histological identification becomes impossible. Admitting complete ignorance of the

BIBLIOGRAPHY

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Ear
Nose and Throat
Mouth
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Surgery of the Nervous System

Brain and Spinal Cord
Cranial Nerves
Spinal Nerves
Sympathetic Nerves
Miscellaneous

Surgery of the Chest

Chest Wall and Breast
Trachea, Lungs and Pleura
Heart and Pericardium
Esophagus and Mediastinum
Miscellaneous

Surgery of the Abdomen

Abdominal Wall and Peritoneum
Gastrointestinal Tract
Liver, Gallbladder, Pancreas and Spleen
Miscellaneous

Gynecology

Uterus
Adnexa and Peritonium
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Pregnancy and Its Complications
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Experimental Surgery
Histopathological Medical Literature and History

physiological demands made upon it, this region of the retina must be especially well nourished, and on account of its paucity of blood vessels a rapid exchange of materials is necessary. Therefore, the capillary walls about the macula are exceptionally permeable. The tendency of the retinal tissues in the region of the macula to become oedematous, as assumed by Schieck, represents a menace in vascular diseases. The vascular injuries common to these diseases are of a degenerative (primary degenerative coloboma) or inflammatory (secondary inflammatory coloboma) character. Primary coloboma is seen in old age, advanced arteriosclerosis, and injury of vessel walls due to toxins (alcohol). The failing circulation favors oedema, and the retina gradually undergoes cystic degeneration. In inflammatory coloboma (coloboma of luetic chorioretinitis and tuberculous inflammation of the anterior portion of the eyeball, iridocyclitis, and sympathetic ophthalmia) the condition is less one of pressure atrophy from the accumulation of fluid (oedema) than of the accumulation of bacteria and toxins, the resorption of which is hindered by the poor vascular supply of the region. The retinal tissues are able to offer little resistance to the necrotizing effects of these substances. In acute inflammations with highly virulent organisms, such as panophthalmitis, the macular tissues melt away rapidly. KURT STEINDORFF (O)

Colenbrander, M. C. The Localization of Tears in the Retina (Die Lokalisation der Netzhautrisse). *Arch f. Ophth.*, 1931, cxxvi, 424

"Every localization has for its object the determination of the location on the convex surface of the sclera." No reckonings are necessary to determine the meridian. The determination of the "parallels" presents many difficulties, as is evident from the multiplicity of methods recommended. The simplest method for localizing tears in the retina is that used by Gonnin and Voigt, which goes back to Graefe. All other methods seek for a relation between the distance from the limbus to the point on the sclera corresponding to the tear and the angle formed by the line of sight of the examiner looking toward the tear with the line of sight of the person being examined or his corneal axis (symmetry axis). They fall into two groups: an experimental and a graphic group.

Donders and Druault (experimental method) made the observation that a small source of light, when the rays fall laterally, forms a small bright spot in the sclera. They determined the distances from the limbus to the source of light corresponding to various angles of incidence. Donders used the corneal angle as a basis and Druault, apparently, the line of sight. A slight inexactitude in the method of Donders and Druault is due to the fact that, because of the oblique course of the rays, the illuminated spot on the retina and the shining spot on the sclera are not exactly superimposed. The great advantage of this method is that, when the source of light is placed under the desired angle, the distance from the

limbus is found without a single theoretical supposition or an assailable constant. Because of this important advantage, Comberg (Heidelberg, 1930) attempted to repeat the experiment in certain clinical cases. He has an assistant shift a slightly modified model of Lange's lamp about in the vicinity of the retinal tear until the examiner perceives through the pupil the greatest intensity of light just behind the tear. If the tear is situated far to the rear or entirely in the periphery, it is difficult to carry out this procedure.

In the group of graphic methods the relation between angle and distance is determined with the help of a construction drawing, combined with reckoning if required. The significance of the result of the graphic methods depends upon the exactitude of the constructions and reckonings and the correctness of the data. The first to use the graphic method—with very simple data—was Graefe. Graefe constructed for his purpose a localization ophthalmoscope and was the first to point out the advantage of measuring the chord instead of the arc. The localization on the sclera of the measurement found is accomplished far more easily and accurately by means of a compass which includes the determined chord lengths between its points than by means of a graduated arc, which must have the curvature of the sclera. A detailed and critical discussion of Graefe's method follows.

The author gives his opinion also of the methods of Lindner, Goalwin, Groenouw (who was the first to discard focal point construction and base his construction and reckoning on the generally valid law of refraction $\frac{\sin \alpha}{\sin \beta} = \frac{n_1}{n_2}$), Druault, and Hallidie. Colenbrander designed a drawing based on the data which Hess warmly recommended in Chapter 12 of the Graefe-Saemisch Handbook. The drawing was made to a scale of 20:1. The course of only the rays that pass through the anterior pole of the lens was investigated on the basis of the law of refraction. The errors that may be made with this method are the following:

1. Errors from inaccurate construction. Because of the twenty-fold enlargement, the greatest deviation would be only 0.2 mm.

2. All errors arising from the use of a schematic eye.

The author proposes the following schematization:

Angle of incidence	90°	80°	70°	60°	50°
Distance from limbus on nasal side	8	10	12	14	16
Distance from limbus on temporal side	7	9	11	13	15

The values for the vertical meridians lie between. In the absence of the crystalline lens:

Angle of incidence	90°	80°	70°	60°	50°
Distance from limbus superiorly and inferiorly	5	7.5	10	12.5	15

the stapes and the free wall of the utricle, and an increase in the interglobular spaces containing cartilage

Possible causes of the displacement of the stapes were (1) the acute increase of pressure in the inner ear, (2) the otitis media, and (3) the operation. Although renal sclerosis may have produced a considerable increase in the intracranial pressure, Brunner believes that this can be regarded only as a contributory cause of the luxation of the stapes as it was insufficient to explain the fissure of the base of the stapes and the torsion to the right. He comes to the same conclusion regarding the internal ear as a severe suppuration here would have left more residual change. However, displacement of the stapes was favored by loosening of the annular ligament.

Chronic middle ear suppuration could hardly have turned the stapes 180 degrees as a tympanogenous inflammation of the internal ear in a four-year old child healed with scarcely any sequester formation. However, the otitis media may have favored the end-results by thinning the base of the stapes and the pillar so that the stapes was subjected to a considerable change of position on slight trauma.

In the author's opinion a traumatic luxation or fissurization of the stapes was favored by maximal thinning of the base of the stapes. It is evident that the luxation healed without subsequent inflammation of the internal ear as the labyrinth (in the sense in which this term is used by Alexander) showed no residual signs of inflammation. The cochlea, however, presented evidence of inflammation (it is least affected by trauma). The exuding perilymph probably protected the internal ear from infection. It is possible also that the residual signs of meningeal inflammation of the internal ear preceded the injury to the stapes. The vestibulocochlear septum protected the cochlea from infection.

I. GROSSMAN (H)

Blumenthal, A. Care of the Wound After Antrotomy (Zur Wundversorgung nach Antrotomie) *Ztschr f Laryngol, Rhinol*, 1931, xx, 339

In order to shorten the after-treatment following antrotomy and obtain the best possible cosmetic results, the author proceeds as follows:

After the usual retro-auricular incision and cleaning out of the cells the posterior bony wall of the auditory canal is resected nearly up to the tympanic membrane and then, to drain the secretions from the dermal portion of the auditory canal, a right-angled flap with a lateral base is made and sutured to the periosteum of the anterior border of the retro-auricular incision of the skin. The auditory canal is packed and the retro auricular incision is sutured except in the lower portion, where a gauze drain is inserted. After three days the packing is removed and a light bandage is applied.

The incision heals in from six to ten days. The wound in the auditory canal requires no special treatment except occasional irrigations which can be

done by the patient himself, and heals in from four to five weeks.

This method is of course not employed when, because of complications, retro-auricular suture is contra-indicated. The author has used it in only four cases.

WOELK (H)

Yates, A. L. Subacute Otitis Media *Brit M J*, 1931, ii, 647

The author emphasizes the importance of recognizing and treating cases of subacute otitis media. Check-up hearing tests give a clue to the prognosis. Continued diminution of hearing after the pain has subsided usually means an unfavorable prognosis. The condition is characterized by recurrent pain in the mastoid region. As the otitis is always secondary, the removal of infected adenoids and tonsils and treatment of infected sinuses are important.

Subacute otitis media may be of a hypertrophic or an atrophic type. In the hypertrophic type the deafness varies from day to day and there are periodical attacks of pain. Confluent deafness is the result. As the condition progresses the tympanic membrane becomes more opaque. A fluid level may be seen. The treatment indicated is myringotomy, eustachian catheterization, and measures to clear up the infection. The atrophic type is usually due to a non-producing infection. The latter may date from an attack of influenza. In chronic cases there is steadily increasing deafness which finally simulates that of otosclerosis. The tympanic membrane is transparent, and the middle ear may be dry or filled with mucus which is clearly visible. If the condition is recognized early, catheterization of the eustachian tube, examination of secretions, and graphic charts of the hearing will reveal its progress. Early and persistent treatment may save hearing.

JAMES T. MILLS, M.D.

NOSE AND SINUSES

Uffenorde, W. Radical Treatment of Suppurations of the Frontal Sinus (Zur radikalen Behandlung der Stirnhohleneiterung) *Acta oto laryngol*, 1931, xvi, 117

After Killian's operation on the frontal sinus the cosmetic result is often unsatisfactory in spite of the preservation of a supra-orbital bridge of bone. The Jansen-Ritter orbital operation on the frontal sinus, besides its other advantages, gives better cosmetic results, but even this method does not assure permanent patency of the entrance to the nose. Uffenorde has elaborated his plastic operation (described in *Archiv fuer Ohrenheilkunde*, Vol 100), which was designed to avoid this difficulty, into a double plastic procedure. The opening in the bone in the lateral region of the root of the nose is made larger than the opening usually formed. Besides the entire frontal process of the superior maxilla, the nasal bone as far as the median line and the pyriform aperture and the lachrymal bone is removed without causing a cosmetic defect.

collar A plaster-of-Paris mould of the neck is made and with this as a guide a sheet lead mould 1 mm thick is hammered out. Needles containing a total of from 90 to 150 mgm of radium are suitably placed on the outside of the mould. The lead collar is held away from the skin by a layer of sponge rubber 1.5 cm thick. With this apparatus, a dosage as high as 20,000 mgm-hr is administered.

C D HAAGENSEN, M D

PHARYNX

Brooks, E B. Acute Retropharyngeal Abscess, Report of Cases. *Laryngoscope*, 1931, xli, 671

Retropharyngeal abscess may follow tonsillectomy performed under local anesthesia. Its incidence can be reduced by performing the operation under carefully induced block anesthesia.

Retropharyngeal abscess is more common than is generally supposed. It is often overlooked. A careful examination of the pharynx should be made in the cases of all infants with infection of the upper respiratory tract, dysphagia, or dyspnea and cervical adenitis.

When the condition is recognized early and treated promptly, the prognosis is good.

Abscesses involving the pharyngomaxillary fossa and carotid sheath may often be evacuated through an incision made anterior to the sternomastoid.

JAMES C BRASWELL, M D

NECK

McEvers, A E. The Surgical Treatment and Management of Pharyngo-Oesophageal Diverticulum. *Surg, Gynec & Obst*, 1931, lxi, 525

The pharyngo-oesophageal pulsion diverticulum (Zenker) arises from the posterior wall of the oesophagus at the lower end of the pharynx on a line with the cricoid cartilage. It is a herniation of the mucous membrane and submucosa of the oesophagus through a weak point known as the "Laimer-Hackermann point" near the junction of the inferior constrictor muscle and the longitudinal muscular bands of the oesophagus. It is about four times more frequent in men than in women. The average age at which it occurs is between fifty and sixty years. It is found in persons who are more prone to other herniae and in those who show a congenital tendency toward diverticula elsewhere.

The signs and symptoms are dysphagia, a large amount of mucus expectoration, particularly in the recumbent position, discomfort in the throat, the spitting up of food which does not appear to have been in the stomach, a loud gurgling splash on swallowing, due to the mingling of swallowed air and food, regurgitation of food at the table and sometimes long after a meal, discomfort in swallowing rather than difficulty in getting down ample food for nourishment, a sensation of choking, a succussion splash as the contents of the sac are ejected when pressure is applied over the sac, a palpable swelling of the neck, generally on the left side, occasional

fits of choking and coughing, a later loss of weight and evidence of starvation, and attacks of temporary stagnation of food and over-distention of the sac which causes obliteration of the normal opening of the oesophagus and prevents the entrance of food into the stomach.

The treatment should be surgical unless the diverticula are small. Medical management consists in dilatation of the oesophagus with olive-tipped bougies. The patient should be taught to empty the sac by exerting pressure upon it or by lavage with a small catheter.

The two stage operation of sac isolation and excision is so satisfactory that it is preferable to all other types of surgical treatment. The author describes the technique in detail. The first stage consists in isolating the sac to its beginning without opening it or the oesophagus. In the second stage the wound is re-opened, the newly formed adhesions around the sac are separated down to its neck, the neck is ligated, and the sac is removed.

In many cases there will be drainage of swallowed fluids for from three to six days, but the fistulae will usually close if feedings are continued by catheter and swallowing is prohibited for a few days longer. Stricture rarely follows. In most cases postoperative dilatation of the oesophagus is unnecessary.

SAMUEL KAHN, M D

Miller, R H. The Present Status of the Treatment of Tuberculosis of the Cervical Lymph Nodes. *Ann Surg*, 1931, xciv, 539

Miller states that the incidence of cervical tuberculosis is today much lower than it was twenty-five years ago. Its reduction is believed to be due to the elimination of infected cows, pasteurization of milk, and the more frequent removal of tonsils and adenoids in childhood.

Cervical tuberculosis is often a primary focus from which the infection spreads to other parts of the body.

One group of cases reviewed by the author were treated conservatively with heliotherapy, cod liver oil, and tomato juice. Roentgen therapy has been used by the author very little since, in the case of a young man with marked cervical tuberculosis, the decrease in the size of the glands following this treatment was followed by the equally rapid development of a fatal milary tuberculosis.

In a second group of cases reviewed, various methods were employed. If the node or nodes were broken down and fluctuant and the overlying skin was red, incision and drainage were regarded as advisable and were frequently followed by gentle curettage.

The author treats large cold abscesses by evacuation through a $\frac{1}{4}$ -in incision at the lower end. Through this incision is introduced a small rubber drain which is left in place for from ten to fourteen days, until a well draining sinus is established. The sinus may drain for weeks, but as a rule it ultimately heals.

laryngocele is entirely within the larynx. In external laryngocele the main mass of the sac, after it has perforated the thyrohyoid membrane, lies on the side of the neck. The size of the external sac varies greatly. In marked cases it extends upward to the submaxillary gland, downward to the thyrocricoid space, and posteriorly sometimes to the inner edge of the sternocleidomastoid muscle. Anteriorly, however, it never reaches to the midline of the neck. Combined laryngoceles show the picture of the two forms.

Besides a congenital predisposing factor, increased intralaryngeal pressure is of great importance in the formation of air sacs. The authors believe, however, that the chief factor is a congenital peculiarity in the anatomical structure of the larynx, and that increased intralaryngeal air pressure only favors the development of the anomaly. The anomaly usually appears after a loud cry.

Of a series of fifty-five cases reviewed by the authors, thirty-two were those of males and seventeen those of females. In the descriptions of six specimens the sex was not recorded. In forty-one cases the tumor was unilateral, and in twelve bilateral. In the descriptions of two specimens the site was not mentioned. The tumors may occur at any age.

In cases of true and symptomatic laryngocele the symptoms vary according to the type of the laryngocele. In the internal form there is first a change in the character of the voice, which is noticeable in early youth. This may progress to complete aphonia. Other symptoms are dysphagia and difficulty in breathing. Sometimes the symptoms appear only during phonation and disappear with quiet breathing. Phonation and inspiration may not affect the size of the tumor. The external laryngocele appears suddenly under conditions which favor the penetration of air into the preformed sac. As a rule there is pain in the larynx and neck associated with or followed by the appearance of the tumor on the side of the neck. In some cases there may be pain only on coughing, overexertion, or movement of the head. In isolated external laryngocele the voice and the condition of the larynx remain normal. The neoplasm on the neck is elastic, painless, and not adherent to the skin. Percussion reveals a tympanic note which is more marked than on the other side of the neck. On deep inspiration or pressure, the tumor may considerably diminish in size or disappear entirely, but it reappears on phonation and coughing. Sometimes its size does not change. When pressure is made over it a characteristic noise of air escaping from a sac may be heard. Combined external and internal laryngocele is associated with the symptoms of both forms. In isolated cases the sac becomes purulent or contains an accumulation of mucus.

In symptomatic laryngocele, which usually shows the character of the internal form, the symptoms are the same as those of true laryngocele. The most characteristic signs are the sudden, noisy distention

of the sac on phonation and disappearance of the sac on respiration.

In the internal form the diagnosis is occasionally difficult. If no change in the size of the sac is noted on phonation or expiration, the mass may be considered a tumor or cyst and the diagnosis may be made by exploratory puncture. If the laryngocele is suppurating, puncture will be of no aid and the nature of the condition may be revealed only by operation. Roentgenography in the usual lateral position does not always disclose a true laryngocele. In external laryngocele the diagnosis is much easier. The sudden appearance of an elastic tumor in the anterior cervical triangle under exertion is characteristic. The tumor increases in size under the influence of pressure or the respiratory phase, the noise of escaping air is noted when pressure is made over the tumor, and an increased tympanic note is heard on percussion. The conditions to be differentiated are cyst of the neck, teratoma, lipoma, and other soft tumors of the neck. The differential diagnosis is aided by puncture and a lateral roentgenogram. Puncture allows the escape of air with collapse of the swelling. Roentgenography reveals the quite sharply circumscribed shadow of an air-containing sac in the background of the laryngeal framework. Sometimes operation is necessary for diagnosis.

When the mass is not large, treatment is usually unnecessary, but when treatment is indicated only surgery is effective. The operation indicated is radical extirpation of the air sac. Puncture is followed by rapid recurrence, but may be used in dyspnea as a temporary measure.

LOUIS NEUWELT, M.D.

Clute, H. M., and Warren, S. Cancer of the Thyroid Gland. *Am. J. Cancer*, 1931, xv, 2563.

The authors review all cases of thyroid malignancy in which specimens were studied histologically in the Lahey Clinic up to January 1, 1930. Malignancy of the thyroid was found in 187 of 6,535 cases of goiter operated upon. One hundred and eighty of the patients with malignancy were followed for at least a year after the operation. A clinical and histological grouping of the patients was made for the purpose of foretelling the probable clinical course of the different types of tumors and their probable response to treatment. The cases were classified into 3 groups as follows:

Group 1, cases of low or potential malignancy. The tumors were adenomata with blood-vessel invasion and papillary cystadenomata. In this group there were 133 cases with a mortality of 4.5 per cent. The authors' experience indicates that if recurrence or metastasis does not develop within a year, later trouble need not be expected. Tumors of this group seem to be especially susceptible to X-ray irradiation.

Group 2, cases of moderate malignancy in which there was hope of cure. The tumors were adenocarcinomata of the papillary type and the alveolar

unable to close the lids completely. The lids were oedematous and puffy, the vessels of the sclera were injected, and the range of movement of the eyes was about 25 per cent normal.

On April 7, 1930, a right frontal operation was performed and the right orbit completely decompressed back to the optic foramen. The extra-ocular muscles were found to be greatly increased in size. Histological examination showed the increase to be due to oedema, round-cell infiltration, and fibrosis rather than to true hypertrophy.

The operation was followed by good recovery with a marked decrease in the exophthalmos and an increase in vision and in the movement of the eye.

A month later the same procedure was carried out on the left eye and was followed by improvement similar to that occurring in the right eye.

The patient now has excellent vision and normal sclerae and eye movements. The exophthalmos has greatly decreased.

FRANK B. BERRY, M.D.

Ballin, M., and Moore, P. F. Parathyroidism and Parathyroidectomy. *Ann. Surg.*, 1931, xciv, 592.

Parathyroidism is a clinical entity. It may occur at any age, but is most frequent in adult life. The

parathyroids are hyperplastic or adenomatous. The bones become locally demineralized and fragile. The muscles are weak and hypotonic. The blood calcium is increased, sometimes being as high as 20 mgm.

The chief evidences of the condition are to be found in the skeleton. The softening of the bones leads to curving of the long bones and spine. The height of the body may be decreased. Pathological fractures are not uncommon. Pain develops at the site of giant-cell tumors.

Osteitis fibrosa cystica and osteomalacia are generally attributed to parathyroidism.

Except in osteomalacia and rickets following pregnancy, the treatment is surgical. In the former conditions it is chiefly medical. In surgical treatment, the attempt should be made to remove at least two of the parathyroids. The two inferior glands are usually found most easily. The branch of the inferior artery should be carefully ligated. The nerve is readily seen. Injury to this nerve is best avoided by keeping the patient fairly well awake during the operation so that phonation can be watched.

The authors report sixteen cases.

PAUL W. GREELEY, M.D.

type. In this group there were 21 cases with 5 deaths a mortality of 23.9 per cent. Four of the patients are known to have had recurrences or metastases from a year and a half to four years and a half after treatment. The tumor of this group is much more dangerous than those of Group 1. They have a higher immediate mortality and may recur and metastasize after nearly five years of apparent cure. The treatment is seemingly favorable regarding the growth and sometimes renders it operable tumor is operable.

Group 3 cases in which the ϵ was practically non-existent. The tumours were squamous-cell carcinoma, small-cell carcinoma of the compound type and the diffuse type giant-cell carcinoma and a probable fibrosarcoma. All of the tumours showed histological evidence of active malignancy and rapid growth. Of the 33 patients, 28 (84 per cent) are dead, cannot be traced and 5 died of metastases in the neck and chest. Only 4 are living from one to three years after operation. Of the 7 patients who died only 2 lived more than three years after operation (the 4 and 5 half years) and 1 died 3 years and 16 died within months after treatment. The tumours tend to be sudden in onset and grow very rapidly. Apparently they frequently arise in the absence of a previously noted adenoma according to the thorough personal and x-ray irradiation faults after the course of any marked degeneration.

The authors conducted the following studies:
The group adopted the following practical
value. **CHAPTERS B** **MD**

Coll. F. A. and P. t. r. E. B. Th. Fnd. Res. lts
of Thy. l. d. e. c. t. m. y. A. S. & q. j. i. x. c. j. 569

The uth rs e wth e d results bt ed 733
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be 3 1929 The w r 67 cases f phth im c
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n nt 1 ad ms

[illegible]

Of the patients with the diagnosis of 84 per cent
were females. The average age of the patients with
the condition was 41 years. The diagnosis was made
The average duration of the symptoms was 15 years.
three and a half years. The average age of the pa-
tients of the first five years of the disease was 40 years.
The average duration of the symptoms was 15 years.

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A standard technique of subtotal thyroidectomy was used in all except 34 cases in which fractional operations of 2 subtotal lobectomies were done.

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was obtained in one go per cent T nty sa per
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Of the patients treated, 15 percent were rehabilitated but 35 percent had a weight within 46 lb. The results are defined as between the first and the last day of the disease. Most of the patients were unrelieved were operated upon too late. Six had severe cardiac vascular symptom. One has pulmonary symptom but is free from the symptom. One has a mild disease of the neck. One has a mild disease of the chest. One has a mild disease of the neck. One has a mild disease of the chest. One has a mild disease of the neck. One has a mild disease of the chest.

Of the cases of nitroglycerine poisoning which were followed by good result 95 per cent. The basal metabolism before and after treatment was essentially the same before and after treatment. For K B B x MD

Naftig H. G. Progress in Epithelioma of the
 Thyroidectomy. It is a pathology and treat-
 ment of the disease. 1911. 58

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ligation of both jugular veins survived, whereas those subjected to ligation of both jugular veins and one vertebral artery died the day after the operation. Of two dogs subjected to ligation of both internal jugular veins plus one vertebral artery plus both external jugular veins, one died and one survived.

Series 3. Ligation of the afferent and efferent vessels. Five experiments. Of two dogs subjected to ligation of both carotids and both internal jugular veins, both survived. Ligation of all four afferent and efferent vessels was followed by death the day after the operation. Ligation of two vertebral arteries and four veins resulted in death on the tenth day after the operation. Ligation of all four afferent and efferent vessels and the two external jugular veins was survived.

From the results of these experiments the author comes to the following conclusions:

1. The severity of the anatomical lesions of the cells of the brain substance depends in general on the number of vessels ligated and does not always parallel the clinical course.

2. Ligation of the vertebral arteries is more dangerous than ligation of both carotids.

3. Simultaneous ligation of the arteries and veins is not so dangerous as ligation of the arteries alone.

4. An abrupt interruption of the flow of blood away from the brain is just as dangerous as a similar interruption of the flow of blood to the brain.

5. The severity of the brain lesions depends chiefly on the individual development of the collateral paths. Consequently, preparation of the patient for such operations by systematic compression of the arteries is of great importance.

6. Because of the severe cerebral disturbances following these ligations, vessel suture should be done instead of ligation whenever possible.

G ALIPOV (Z)

Balado, M., and Satanowsky, P. Two Cases of Central Cerebral Tumor (Sobre dos casos de tumores centrales del cerebro). *Semana med.*, 1931, xxxviii, 593.

The tumor in the first case reported by the authors was a glioma of the left optic nerve with invasion of the corresponding portion of the chiasm and the entire tuber cinereum. The only symptoms were left orbital headache, lachrymation, and alteration of the left visual fields. There was no metabolic disturbance. Neurological examination indicated a lesion of the chiasm, and as antiluetic medication was ineffective this was believed to be a tumor. A ventriculogram made with lipiodol suggested a more extensive process than had been suspected. Blood, urine, and spinal fluid examinations were negative. Symptoms of meningitis were followed by death.

Examination of frontal sections made 1 cm. apart showed that the tumor extended from the anterior border of the chiasm to the mammillary bodies. In

the left hemisphere the second and third frontal and the orbital convolutions were destroyed. The internal capsule was yellow in the anterior portion and the corpus striatum was oedematous. The insula and first temporal convolution were softened and the body of Luys and external geniculate body were atrophied. The tuber cinereum was surrounded by a tumor. The entire ventricular system as far as the cisterna was filled with exudate. The right hemisphere was involved only in the chiasm and tuber cinereum. The histological diagnosis was neurospongioma.

In the second case reported the symptoms were frontal headache, vertigo, nausea, and vomiting. There was an intense papilloedema which was greater in the right than in the left eye. This together with increased reflexes on the left side led to a diagnosis of neoplasm of the right hemisphere. An encephalogram suggested the presence of a tumor compressing the third ventricle. On puncture of the occipital horn of the ventricle the spinal fluid was found to be under great pressure. The serological examination was negative. Death occurred three months after the examination.

Section of the brain disclosed destruction of the right third frontal convolution and dilatation of the ventricle with granular ependymitis. On the left surface of the septum there was a gray adherent mass which extended into the corpus callosum, third ventricle, and left thalamus. Histologically, the tumor was a very vascular glioma. The postmortem examination corrected the interpretation of the encephalogram which led to erroneous localization of the tumor.

The gross and microscopic appearances of the two tumors are shown in illustrations.

A. E. TAFT, M.D.

Chavany, J. A., David, M., and Puech, P. The Diagnosis of Intrapontine Tumors. Considerations Regarding Two Gliomata of This Region (Considerations sur le diagnostic des tumeurs intraprotubérantielles. A propos de 2 cas de gliomes de la région). *Presse med.*, Par., 1931, xxxix, 1433.

In rare instances brain tumors may produce the symptoms of the so-called pontine syndromes. Usually a tumor in the region of the pons is a tuberculoma, but whether tuberculous or glomatous it is beyond the resources of surgery. Therefore its differentiation from a tumor of the posterior cerebral fossa is important in order that even an exploratory operation may be avoided.

The symptoms of intrapontine tumors appear insidiously in young adults and develop progressively. There is not the intermittent aggravation observed in multiple sclerosis. Of great importance is the contrast between early and intense focal symptoms and the late development of intracranial hypertension. From the beginning, cord symptoms dominate the picture. Spastic paralysis, hyperactive reflexes, and a positive Babinsky sign appear early and are often bilateral.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

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clear While it would be incorrect to base operative treatment on these theories, the Poussep operation seems to be justified by the possibility that it may afford relief However, it should be performed in only selected cases The cases are of two types—dry cases and cases with hydrops It is only in the latter that improvement may be expected from the operation In hydrops, the excessive pressure is relieved by the opening of the cavities The nerve tracts which have not been destroyed by the pressure then recover their function, further progress of the condition may be prevented, and trophic ulcers and poorly uniting fractures often heal As the trophic disturbances usually develop as the result of the action of some external nova, further trouble may be avoided by care in the manner in which the affected extremity is later used After the cavity in the cord has been opened and evacuated, it undergoes cicatrization This seems to present the only possibility of cure A contra-indication to the operation is total anæsthesia at the level of the proposed operative incision When this is present there is danger that the operative wound will not heal

The author reports cases in support of his views

MANDEL (Z)

Putnam, T J, and Munro, D Myelotomy in the Treatment of Syringomyelia *New England J Med*, 1931, ccv, 747

The authors report four cases presenting the classical picture of syringomyelia which were treated surgically The operation consisted of laminectomy with opening of the dura and incision through the posteromedian aspect of the cord into the syringomyelic cavity The incision extended the entire length of the cavity Only one of the four cases presented signs of bulbar involvement and in this case the cavity was traced into the medulla After the operation one patient showed practically no improvement, two had slight improvement in sensation and an increase of strength and motion in the hands and arms, and one showed a marked return of sensation and motion with a striking functional result Pre-operative X-ray therapy was given in only one case and caused, if anything, an increase in the symptoms

While incision of the cyst is not expected to arrest the gliosis in the cyst walls, the relief of pressure it produces results in amelioration of the symptoms whether the cord is distended sufficiently to block the canal or not X-ray therapy is beneficial in

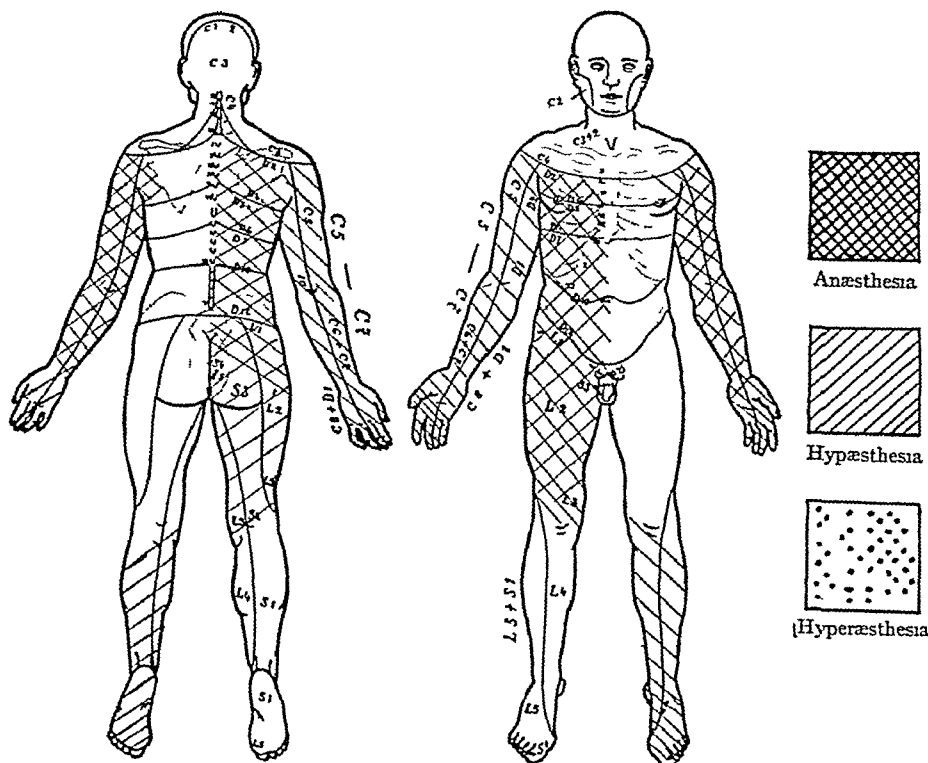


Fig 1 CASE 2 Area of loss of sensation of heat and cold before operation. Pinprick about equally affected over the same area (Putnam, T J, and Munro, D)

available. The indications for operation on the abdominal sympathetic are based on the function of the nerve. The first operations were performed to alleviate visceral pain. Even paravertebral novocain injections may be of great therapeutic value. Of great importance are the centrifugal functions of the abdominal sympathetic, evidenced particularly by the persisting hyperemia in the lower extremities after resection of the lumbar sympathetic and its lumbar and sacral ganglia. In the so-called spontaneous gangrene so frequent in Japan, periarterial sympathectomy has not been satisfactory. Since 1925, therefore, lumbar sympathectomy has been done in this condition and often has given good results. This operation is indicated whenever an energetic stimulation of the circulation of the lower extremities is required. Accordingly it is performed in cases of impending gangrene from any cause, old ulcers of any kind, roentgen ulcers, leprosy, ischemic forms of bone and joint tuberculosis, and poorly healing fractures, and to clear up bacterial infection in osteomyelitic foci before sequestrotomy is done. As the effects of the operation last for only

a limited time, the procedure is indicated when there is some advantage to be gained from a temporary improvement in the circulation.

At first the author performed the transperitoneal operation, but since 1929 has used the extraperitoneal method. The incision is the same as for operation on the ureter. After deflection of the peritoneum the sympathetic system and its ganglia are seen between the large vessels and the medial border of the psoas muscle. The sympathetic and three or four lumbar ganglia are excised from the rami communicantes and other connections. The tracing of the sympathetic downward under the vessels for resection of the sacral portion is very difficult because the common iliac vein is very thin and easily torn. In difficult cases it is better to be satisfied with resection of the lumbar ganglia.

No harmful effects from resection of the sympathetic have been seen. Whether the removal of higher portions of the sympathetic, such as the celiac ganglion, would be of advantage, as appears possible, must be determined by further experimentation.

VON TAPPEINER (Z)

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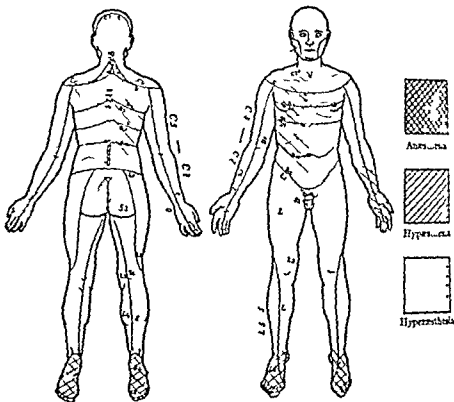


Fig. CASE. Area loss sensation (both sides) after operation (P. J. M. T. J. J. M. D.)

about a per cent of cases but there appears to increase the symptoms. The authors believe it logical to suppose that irradiation acting on the glial lining of the cavity and its blood vessel rather than upon its fluid contents may increase the pressure within by breaking down the cell walls. The effect theoretically operates in a direction which should supplement each other and radiation should always be employed as an adjunct to operation.

The authors concluded that pendulum exercises performed should be reserved for patients who are not relieved by any treatment which has a root pin or spinal block which is not indicated by the disease.

K. K. E. Operative Treatment of Syringomyelia (Zur Operative Behandlung der Syringomyelie) (Arch. f. Klin. Chir. 93: 145)

The author rejects Flessner's proposal that a syringomyelia be operated on if it is not too extensive. The cause of the disease appears to be a process of ectasia of the central canal, which is due to a slow accumulation of fluid, which is not merely a collection of fluid in the central canal

the parenchyma of the cord but a progressive loss of substance of the cord. The cavities are formed by a progressive process of ectasia and destruction. A single evacuation of the cerebrospinal fluid by operation is not sufficient in cases of syringomyelia. The disease is not therefore cured. The cavity leads to further degeneration of the nervous system and the cavity closes.

At the moment of operation, the cavity can be filled with a substance which is not too thick. In true syringomyelia, it is not because the latter condition is not cured by operation. The latter condition is not cured by operation. The latter condition is not cured by operation. The latter condition is not cured by operation.

In two cases, the result was not satisfactory. G. A. M. (2)

SYMPATHETIC NERVES

H. F. Operative Treatment of Abdominal Sympathetic (H. F. Operative Treatment of Abdominal Sympathetic) (Arch. f. Klin. Chir. 93: 145)

The author believes that the sympathetic nerves are not merely a collection of fluid in the central canal

The authors believe it is still advisable to call the condition "pneumoconiosis" for although the active fibrosing agent is usually silica, some other dusts undoubtedly cause similar changes or modify the changes produced by silica. However, the use of occupational terms is indicated because there are peculiarities in connection with changes due to the dusts of certain industries.

Silica is used in a great variety of industries, many of which afford opportunity for its inhalation in dangerous quantities. Methods of determining both the silica content and the concentration of dust in the atmosphere have been devised, and in some industries estimates of harmful quantities have been made.

For the proper interpretation of the roentgen appearance of pneumoconiosis, familiarity with the progressive pathological processes is essential. The authors discuss the entrance of the dust, the "dust cell" or macrophage, the entrance of the dust cell into the lymphatic system of the lungs as a carrier of silica and other particles, the influence of the deposited silica in the production of fibrous tissue, the action of silica, the elimination of dust, and the predisposition of the fibrotic and silica-saturated lung to infections, especially tuberculosis.

Coincident tuberculosis is one of the most serious phases of silicosis and very frequently has been the cause of death although silicosis itself may prove fatal. As tuberculosis affects particularly persons in whom silicosis develops most rapidly, it can be controlled to a certain extent by measures directed against the rapid progress of the predisposing condition. Although mediastinal tumors and lung cancer have been found in association with pneumoconiosis, their occurrence has not been sufficiently frequent to make it seem probable that they are other than coincidental conditions. The authors mention also complications which are comparatively rare but some of which may have an etiological relationship. The subject's age, race, and individual characteristics appear to have little influence on the condition.

The diagnosis depends, in addition to the roentgen findings, on a knowledge of the patient's past and present occupation and the presence of dyspnea. Dyspnea is usually a prominent late manifestation. In chronic cases about the only early symptom is a cough which often is unproductive. In acute cases, dyspnea is a relatively early symptom, usually coming on after from one to five years. In the late stages there is apt to be some cyanosis, fever, a considerable loss of weight, and, toward the end, an acute illness.

Various classifications of the progressive stages of the disease have been based on the roentgen findings. The authors describe the stages in some detail. The first stage is characterized by a definite increase in the prominence and extent of the hilar shadows, increased prominence and thickening of the trunk shadows, and increased prominence of the linear markings of the peripheral zone, the second stage,

by small rounded densities varying in size from that of a pinhead to that of a pea, which are distributed throughout both lungs, and the third stage, by a predominant diffuse fibrosis of variable extent and distribution. In the first two stages the difficulties in the differential diagnosis are comparatively slight, but in the third stage the findings closely resemble those of tuberculosis. Several other classifications are discussed. The authors suggest the following classification based on the pathological and roentgen changes:

1 Peribronchial, perivascular, and lymph-node predominance (a) rapid, (b) slow

2 Early interstitial predominance (interference with diaphragmatic movement) (a) with a nodular appearance, (b) without a nodular appearance, (c) rapid, and (d) slow

3 Late or advanced interstitial predominance

4 Nodular predominance (a) non-progressive, (b) progressive

5 Advanced diffuse or terminal fibrosis (a) conglomerate nodular type, (b) interstitial type, and (c) massive fibrosis type

Of importance in the prevention of the condition are measures to keep the dust in the atmosphere to be inhaled reduced to the minimal amount, to settle the dust as much as possible before the air is inhaled, to remove the dust-laden air rapidly, to separate dust particles from the air before they can gain entrance to the respiratory tract, and to prevent the spread of pulmonary tuberculosis. In addition, medical boards to control the condition should be appointed.

The authors discuss especially types of pneumoconiosis peculiar to certain industries such as coal mining, the asbestos industry, hard rock mining, the abrasive industry, the sandstone industry, sand-pulverizing, sand-blasting, the granite industry, iron mining, metal industries, the pottery industry, the cement industry, and vitreous enamel painting. Various phases of these occupations tending to produce pneumoconiosis are discussed at length. It is generally believed that organic dusts, exclusive of coal, are of no or only slight importance in the production of pneumoconiosis.

ADOLPH HARTUNG, M D

HEART AND PERICARDIUM

Yater, W M. Tumors of the Heart and Pericardium. Pathology, Symptomatology, and Report of Nine Cases. *Arch Int Med*, 1937, xlviii, 627

Yater presents a review of the literature on tumors of the heart and pericardium and reports nine cases.

Tumors of the heart and pericardium are rare. Metastatic lesions are usually carcinomatous or sarcomatous. They may occur from a primary growth in any organ. The heart is invaded usually by way of the blood stream. The right side of the heart is more often and more extensively involved than the left.

SURGERY OF THE CHEST

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J D r W l l r MD

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Leyton, O., Turnbull, H. M., and Bratton, A. B.
Primary Cancer of the Thymus with Pluriglandular Disturbance *J. Path. & Bacteriol.*, 1931, XXXIV, 635

This is a detailed report of two cases of primary carcinoma of the thymus associated with diabetes and hypertrophy of the suprarenal and thyroid glands. In a review of the literature the authors were able to find only one other case of carcinoma of the thymus with diabetes.

The authors' first case was that of a boy of eleven years who developed hypertrichosis, fatness of the face, a dusky brown pigmentation of the skin of the entire body, a protuberant abdomen, and diabetes, and died with convulsive seizures. Autopsy disclosed involution of the thymus and a small-celled carcinoma on the aortic arch which the authors believed was primary in the thymus. The suprarenal bodies were abnormally large. The hypertrophy was confined to the cortex, the medulla being largely replaced by lymphocytes and plasma cells. The thyroid gland was also unusually large. The struc-

ture of the pancreas was obscured by postmortem changes. The pituitary gland, pineal body, and testicles were normal for the age of the patient. Death was attributed to hypoglycæmia resulting from insulin treatment.

The second case was that of a man thirty-one years of age who developed increasing fatness of the neck and trunk, striae atrophicæ on the abdomen, diabetes, an abscess of the thigh, an abscess of the floor of the mouth, and cellulitis of the neck and died with respiratory difficulty. Autopsy revealed, in addition to the changes due to the sepsis which caused death, a carcinoma of the thymus with metastases to the mediastinal nodes and the surface of the right lung. The carcinoma was of the small-celled type. The suprarenal bodies were exceptionally large, but the hypertrophy was limited to the cortex. The thyroid was distinctly larger than usual. The pineal body, pituitary gland, and testicles were normal for an adult. The pancreatic structure was obscured by postmortem changes.

C. D. HAAGENSEN, M.D.

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C. D. HAAGENSEN, M.D.

The livers and spleens of the animals dying from tularemia after injections of the cultures were sent to the hygienic laboratory for examination. When they were sent in the same container they failed to introduce the strain into guinea pigs, but when the spleen was sent separately infection resulted. Attention is called to the fact that the bacterium *tularensis* does not survive long in the liver.

When the author's patient was re-examined four years later he stated that it was two and a half years before his strength returned to normal. He is now well.

The authors' findings and conclusions are summarized as follows:

1 Bacterium *tularensis* may cause peritonitis and may be isolated from ascitic fluid.

2 It is possible for laboratory workers to handle animals infected with bacterium *tularensis* safely if they exercise great care.

3 When the strain is transported, the spleen should be sent in a container by itself.

4 The organism grew best for us on glucose, cystin meat-infusion agar with a pH of 7.3.

5 The morbidity following tularemia peritonitis extends over a much longer time than would be expected in the absence of complications.

6 The patient whose case is reported is living and well four years after having had tularemia peritonitis.

L. ENWORTH BOVIE, M.D.

GASTRO-INTESTINAL TRACT

Smyth, M. J. Gastrojejunal Ulcer. *Irish J. M. Sc.*, 1931, 6 s., No. 70, p. 553.

The author would classify gastrojejunal ulcer as a new and artificial disease. He takes up in detail the nomenclature, statistics, etiology, site, pathology, pathogenesis, technical factors, symptoms, and preventive, pre-operative, and surgical treatment.

He believes that the high, short, rapidly emptying stomach with early duodenal ulcer is usually not the type for which to advise immediate operation. However, if the patient gives a three- to five year history and medical treatment has failed, operation is necessary. Gastrojejunostomy is the operation of choice for duodenal and pyloric ulcers. Smyth is not in favor of partial gastrectomy for these cases. He mentions also section of the left vagus above the incisura angularis and unilateral adrenalectomy. He believes that in gastrojejunostomy an absolutely no-loop operation should be avoided for if gastrojejunal ulceration occurs after such a procedure the second operation will be difficult. If in such cases a partial gastrectomy is done, the proximal loop can be joined to the distal loop only below the stomach and the neutralizing effect of the alkaline juices is lost to the stomach.

Before operation the patient should be given a course of medical treatment if possible. This will relieve the gastritis.

For complete radical treatment of gastrojejunal ulcer, Smyth believes it necessary to resect the stom-

ach well proximal to the line of anastomosis and perform a fresh gastrojejunostomy. If the preliminary stage of the operation, that is, resection of the anastomosis, has been done below the transverse mesocolon, it will be found more convenient to stitch up the opening in the stomach and displace it into the lesser sac. If the colon is involved by the ulceration, special care must be taken in separating it. If resection of the colon becomes necessary and the patient's condition is good, it is wise to supplement the operation by caecostomy. In cases of ulceration in the proximal loop of the jejunum it may be possible to resect without difficulty, but if resection is out of the question, it may be best to perform a jejunostomy and delay more radical measures until later.

EMIL C. ROBITSHEK, M.D.

Asta, L. M. Perforated Gastric Tumors. A Roentgen Study of Two Cases (Tumori gastrici perforati. Studio radiologico di due casi). *Radiol. med.*, 1931, XVIII, 1277.

In the first case reported by the author a large ulcerating carcinoma involved the lesser curvature of the fundus and the cardiac portion of the stomach. The ulceration along the lesser curvature had penetrated into the perigastric tissues and the abdominal wall and the carcinoma of the fundus had perforated into the left subphrenic space. Roentgen examination disclosed a large niche on the lesser curvature and a crescent-shaped air shadow under the left diaphragm which was due to the perforation in the cardia.

In the second case a massive gastric carcinoma had ulcerated into the liver. Roentgen examination disclosed an unusually large niche and an extragastric barium shadow in the region of the liver due to the intrahepatic extension of the carcinomatous ulceration.

PETER A. ROSE, M.D.

Talamo, L. Subacute Perforations of the Duodenum (Le perforazioni subacute del duodeno). *Radiol. med.*, 1931, XVIII, 1289.

Talamo studied numerous cases of perforation of the duodenum with fistula formation that were demonstrated by roentgen examination. He reports three cases of subacute perforation of the duodenum with the formation of a fistula between the duodenum and an encysted portion of the peritoneal cavity. In one case the barium was seen to leave the duodenum and enter an area limited above by the diaphragm, laterally and anteriorly by the abdominal wall, below by the transverse colon, and medially by the suspensory ligament of the liver and peritoneal adhesions. Operation was done immediately and the encysted space drained. Death occurred three days later. In the two other cases the barium was seen to leave the duodenum and enter small subhepatic peritoneal pockets. In one of these cases operation was followed by recovery, in the other, the patient refused operation and left the clinic.

In discussing the etiology of these localized perforations the author assumes that a periduodenitis

ula, the increase in the pressure in an atonic large intestine exerting sufficient force to cause outpocketings along the line of least resistance. The normal structure of the colon favors the occurrence of outpocketings at weak points where the blood and lymph vessels pierce the intestinal wall. Accordingly, the diverticula are simple pulsion pouches which are formed as the direct result of internal pressure at weak points.

The pathological features are those of a chronic inflammation of the bowel wall arising at first from one or more diverticula but later involving all of the coats of the intestine, including the serosa, and extending even to surrounding structures. Grossly the pouches resemble pea shaped projections from the bowel. They may be contained in appendices epiploica covered with fat and not readily visible. Their characteristic dark blue color is due to contained fecaliths.

The symptoms depend entirely upon the stage of the condition and the extent of the pathological changes. It is the inflammatory reaction in the diverticula that often gives rise to symptoms. The diverticula of themselves often cause no symptoms, as proved by their appearance in routine barium examinations. As a rule the patient complains of abdominal discomfort, and less often of pain not related to the ingestion of food. As the majority of the lesions occur in the sigmoid, the pain and discomfort are usually localized in the left lower quadrant of the abdomen. There may be a history of disability over a period of years associated with constipation and diarrhoea and a sense of incomplete evacuation of the bowels. In the acute perforative cases the presence of a palpable mass in the lower left side is a common finding. Blood is seldom passed by rectum. After a barium enema the roentgenogram reveals palisade-like projections from the lumen of the bowel.

The treatment indicated depends upon the extent of the condition and the complications. Diverticulitis is not primarily a surgical disease, but surgery is always indicated for complications such as perforation, abscess, obstruction, and fistula formation. The condition can be controlled medically if treated early. In early cases the treatment consists of careful hygiene of the mouth and alimentary tract, the removal of foci of infection, the use of a simple regular diet containing a good amount of fruit and vegetables and little meat, regulation of the bowel movements, and the use of mineral oil to keep the stools soft.

The authors divide their thirty six cases of diverticulitis into five groups as follows:

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patient was given a special diet and showed much improvement.

Group 2. Chronic diverticulitis without perforation or complications. Seven cases. In six of the cases in this group the lesions were confined to the descending colon and sigmoid and in one case they were located in the ascending colon. All of the patients were treated conservatively with a dietary regime. When discharged six showed improvement.

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Case 1. Sigmoid. Symptoms present for five days. Witzel enterostomy, appendectomy. Death from general peritonitis and ileus.

Case 2. Sigmoid. Symptoms present for two days. Excision of the diverticulum and drainage. Improvement.

Case 3. Sigmoid. Symptoms present for three days. Caecostomy and incision and drainage of a sigmoidal abscess. Death from general peritonitis.

Case 4. Sigmoid. Symptoms present for two days. Biopsy and Mikulicz tampon drainage. Death from general peritonitis.

Case 5. Sigmoid. Symptoms present for one month. Mikulicz operation, first stage. Death from peritonitis.

Case 6. Caecum, ascending colon, and right transverse colon. Symptoms present for five days. Resection of the ascending colon and hepatic flexure. Death from pneumonia.

Case 7. Caecum. Symptoms present for two days. Suture of perforation without drainage. Improvement.

Case 8. Caecum. Symptoms present for two days. Excision of diverticula without drainage. Improvement.

Case 9. Sigmoid. Symptoms present for from two to three weeks. Mikulicz operation in three stages. Improvement.

The mortality in this group was high.

Group 4. Chronic perforative diverticulitis with abscess. Fourteen cases.

Case 1. Sigmoid. Symptoms present for two years. Incision and drainage of abscess. Improvement.

Case 2. Descending colon. Excision of mass with drainage. Improvement.

Case 3. Sigmoid and descending colon. Symptoms present for ten days. Laparotomy. Improvement.

Case 4. Sigmoid. Symptoms present for two years. August, 1927, incision and drainage of abscess. June, 1928, excision of fistulous tract and drainage of abscess site. June, 1928, closure of fecal fistula. Death from bronchopneumonia.

Case 5. Sigmoid. Symptoms present for three days. Incision and drainage of abscess. Improvement.

Case 6. Sigmoid. Symptoms present for one day. Resection of sigmoid and end-to-end anastomosis. Improvement.

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The authors divide their thirty-six cases of diverticulitis into five groups as follows:

Group 1 Acute diverticulitis without complications or perforation. Four cases. In all of these cases the lesions were confined to the sigmoid colon and descending colon. Three of the patients were treated conservatively and placed on a special dietary regime. All reported their condition improved. Operation was performed in only one case. It consisted of simple appendectomy. After the operation the

patient was given a special diet and showed much improvement.

Group 2 Chronic diverticulitis without perforation or complications. Seven cases. In six of the cases in this group the lesions were confined to the descending colon and sigmoid and in one case they were located in the ascending colon. All of the patients were treated conservatively with a dietary regime. When discharged, six showed improvement.

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Case 1 Sigmoid. Symptoms present for five days. Witzel enterostomy, appendectomy. Death from general peritonitis and ileus.

Case 2 Sigmoid. Symptoms present for two days. Excision of the diverticulum and drainage. Improvement.

Case 3 Sigmoid. Symptoms present for three days. Cecostomy and incision and drainage of a sigmoidal abscess. Death from general peritonitis.

Case 4 Sigmoid. Symptoms present for two days. Biopsy and Mikulicz tampon drainage. Death from general peritonitis.

Case 5 Sigmoid. Symptoms present for one month. Mikulicz operation first stage. Death from peritonitis.

Case 6 Cæcum, ascending colon, and right transverse colon. Symptoms present for five days. Resection of the ascending colon and hepatic flexure. Death from pneumonia.

Case 7 Cæcum. Symptoms present for two days. Suture of perforation without drainage. Improvement.

Case 8 Cæcum. Symptoms present for two days. Excision of diverticula without drainage. Improvement.

Case 9 Sigmoid. Symptoms present for from two to three weeks. Mikulicz operation in three stages. Improvement.

The mortality in this group was high.

Group 4 Chronic perforative diverticulitis with abscess. Fourteen cases.

Case 1 Sigmoid. Symptoms present for two years. Incision and drainage of abscess. Improvement.

Case 2 Descending colon. Excision of mass with drainage. Improvement.

Case 3 Sigmoid and descending colon. Symptoms present for ten days. Liparotomy. Improvement.

Case 4 Sigmoid. Symptoms present for two years. August, 1927, incision and drainage of abscess. June, 1928, excision of fistulous tract and drainage of abscess site. June, 1928, closure of fecal fistula. Death from bronchopneumonia.

Case 5 Sigmoid. Symptoms present for three days. Incision and drainage of abscess. Improvement.

Case 6 Sigmoid. Symptoms present for one day. Resection of sigmoid and end to end anastomosis. Improvement.

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Case 12 Sgm d Symptoms p es nt f th e
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tion bowel movements occur spontaneously or the slightest medication is sufficient to restore the normal habit. The postoperative diminution in the size of the colon shown by the administration of barium enemas takes some months to become marked.

NORMAN G. PARRY, M.D.

Hern, J. R. B. *Ulcerative Colitis*. *Guy's Hosp. Rep.*, Lond., 1931, LXXX, 322.

Hern reports a study of fifty proved cases of ulcerative colitis admitted to Guy's Hospital, London, in the period between January 1, 1917, and December 31, 1926. Various forms of treatment, including antidysentery serum, antistreptococcus serum, and operative procedures were used. In Hern's opinion, surgery will never be of great importance in this condition as radical removal of the colon is usually impracticable or too dangerous and other operations are not radical enough. Surgery would seem to be limited to selected cases of active inflammation, either distal or general, and cases with stricture. Transfusion often appears to be highly beneficial.

The value of lavage of the colon is problematical. The main indications are the same as those for surgical intervention. Of chief value in the treatment are rest in bed, plenty of air and light, a liberal diet free from coarse residue, the administration of paraffin oil when required to prevent the formation of hard scybala, the use of charcoal if the stools are very offensive, and the avoidance of purgatives.

ROBERT ZOLLINGER, M.D.

Eggers, C. *Diverticulitis and Sigmoiditis*. *Ann. Surg.*, 1931, xciv, 648.

Diverticulitis of the sigmoid and sigmoiditis are secondary to the presence of diverticula in the walls of the sigmoid. In some cases, however, no gross diverticula are visible, only a thick-walled, red, and cedematous sigmoid being found.

Although diverticula may be present along the entire course of the colon, symptoms are usually produced only by diverticula occurring in the sigmoid, probably because of the narrowness of the lumen of the sigmoid and the frequency of stagnation in this part of the large intestine.

Depending upon the degree of involvement of the affected portion of sigmoid, the symptoms vary from those of irritation to those of the most severe inflammation or obstruction. They are due, not to the mere presence of diverticula, but to complications. Impaction alone gives rise to painful spasm, retention of gas, and perhaps constipation or diarrhoea. Continued impaction leads to ulceration and infection, and may result in perisigmoiditis. The infection usually drains through the lumen of the diverticulum into the gut, but sometimes perforates externally and leads to abscess formation or peritonitis. It may dissect between the layers of the wall of the sigmoid until a large segment becomes involved, forming a palpable tumor. Frequently adhesions are formed to the abdominal wall, bladder, or loops of

small intestine. These may lead to perforation into one or the other viscus with resulting internal fistulae. At times, thrombosis of the blood vessels of the wall occurs and results in necrosis with perforation, or a pylophlebitis extends to the liver. The cellulitis of the wall itself may cause symptoms of obstruction, or adhesions of surrounding loops of gut may produce angulation or obstruction.

According to the pathological changes, the cases may be divided as follows:

- 1 Those of diverticulitis and peridiverticulitis which subsides without operation.
- 2 Those of diverticulitis with complications resulting from perforation, such as abscess, gangrene, peritonitis, and fistulae.
- 3 Those of diverticulitis resulting in intestinal obstruction.
- 4 Those of diverticulitis with carcinoma.

In some of the cases of Group 1 the condition is manifested only by pain in the lower part of the abdomen on the left side. In others, complaint is made of abdominal cramps, gas distention, a feeling of spasm, and constipation perhaps alternating with diarrhoea. The patients are not acutely ill. Examination may reveal tenderness along the sigmoid. In other cases the pain is sharp and shoots through the lower part of the abdomen on the left side. In still others, the symptoms are more definitely those of inflammation, the pain is very severe, a condition of shock may be present, and definite tenderness and rigidity are found in the left lower abdomen and frequently also in the suprapubic region. The temperature rises to 100 or 101 degrees F. Cramps, vomiting, and urinary symptoms may occur. Palpation may disclose a mass extending as high as the umbilicus and suggesting an ovarian cyst or tubo-ovarian disease. Bleeding and discharge, which are uncommon, suggest carcinoma. Experience has shown that carcinoma is not often associated with diverticulitis.

In the acute surgical emergencies, which frequently present symptoms of perforation or obstruction, the diagnosis cannot be made definitely until the abdomen is opened.

X-ray examination is of great aid. Frequently the best outlines of diverticula are obtained after the evacuation of a barium clyma. During the acute stage it is often not the presence of well-filled diverticula, but a narrowing of the lumen with spasm and an irregular filling defect that attracts attention.

The author reviews twenty-four cases with symptoms severe enough to require surgical consultation. All of the patients were over forty years of age.

The chief symptom in these cases was pain. It varied from a constant pain in the lower left quadrant of the abdomen to cramp-like pain associated with incomplete or complete obstruction.

Six patients had a temperature between 99 and 100 degrees F., and twelve a temperature over 100 degrees F. Most of the higher temperatures occurred in cases of perisigmoiditis, peritonitis, and abscess perforation, but in two cases in which there was a

In 1915, Jones described a two stage procedure with desirable features. In the first stage after exploration a colostomy was done and the entire distal sigmoid and rectum were freed with the attached fat and glands. While the inferior mesenteric artery was ligated, the colonic arches were preserved so that adequate circulation was maintained until the second stage was performed. The peritoneum was sewed above the growth, the second stage being thereby rendered extraperitoneal. In this operation the occurrence of sloughs or infection was reduced to the minimum.

Thus, three types of two stage operations have been developed in America: (1) the Mayo operation, (2) the Jones operation, and (3) the author's operation, invagination of the distal segment. In 1922, the author extended the principles of his operation to lesions higher in the rectosigmoid. As the rectosigmoid could not be invaginated, the growth was removed at the first operation, a colostomy was performed, and the distal segment was removed at the second operation. The mortality of this operation was higher than that of the operation for rectal cancer. Experience showed that the mortality was much lower when a three stage operation was done. Preliminary colostomy followed later by abdominal removal of the lesion and still later by removal of the rectal portion of the bowel was proved most satisfactory. The author has found that in long-standing obstructions caecostomy may be necessary in addition to colostomy before a regular mechanism of bowel movement is established.

The author's operative procedure is described in detail and shown by illustrations.

MANUEL E. LICHTENSTEIN, M.D.

LIVER, GALL BLADDER, PANCREAS, AND SPLEEN

Catalano, O. Hepatosplenography. A New Method of Roentgen Study of the Liver and Spleen (La epatosplenografia, nuovo studio radiologico del fegato e della milza). *Rivista internaz. di clin. e terap.*, 1931, vi, 811.

Thorotrast, which stains the liver and spleen selectively, is used for the roentgen study of these organs in the same way as lipiodol is used for roentgen study of the bronchi and uroselectan for roentgen study of the urinary tract. It was discovered by Rüdert. Rüdert started with the theory that certain colloidal substances introduced parenterally are deposited in the reticulo endothelial cells of the liver and spleen in the form of granules which render these organs opaque. Thorotrast is a 25 per cent colloidal solution of thorium dioxide. It is perfectly stable and does not change on contact with organic fluids. It is absolutely non-toxic. The dose necessary for a good roentgenogram is from 50 to 75 c. cm. It is given intravenously in increasing doses for four or five days. The roentgen study is made twenty-four hours after the last injection. If both the liver and the spleen are to be studied, the roentgenograms

are taken from above downward with the patient in the recumbent position, whereas when only the spleen is to be studied ventrodorsal roentgenograms are taken.

Two cases in which thorotrast was used are reported. In the first, a case of cirrhosis of the liver, the roentgenogram showed the spleen to be enlarged. Because of serious changes in its parenchyma, the liver was only slightly opaque. In the other case that of a patient with syphilis, excellent roentgenograms of both organs were obtained.

The method is of value when it is necessary to differentiate tumors in the hypochondrium from tumors of the liver and spleen, in all conditions of the liver and spleen in which the power of fixation has been destroyed by disease of the parenchyma, such as cirrhosis and leukæmia, and in conditions in which this power is destroyed or decreased in circumscribed zones which appear as defects, such as tumors, cysts, and abscesses.

AUDREY GOSS MORGAN, M.D.

Barco, P. Hepatic Hæmorrhage (Sull' emorragia epatica). *Ann. ital. di chir.*, 1931, vi, 913.

From an experimental study of hæmorrhage in wounds of the liver the author has come to the conclusion that the three best methods of producing hæmorrhage in such wounds are autoplasmic muscle grafting, heteroplasmic muscle grafting, and coagulation with the electric bistoury.

Autoplasmic muscle grafts do not always have a prompt and perfect hæmorrhagic action. The muscle fibers gradually degenerate. The connective tissue reaction is such that as a rule only a slight linear scar is produced.

Heteroplasmic muscle grafts bring about prompt and permanent hæmorrhage, but soon degenerate. The connective tissue reaction is intense, and the scar is at least four times as large as that formed when autoplasmic grafts are used.

Strict asepsis is necessary in the application of all grafts.

The use of the electric bistoury followed by suture to prevent secondary hæmorrhage produces immediate and perfect hæmorrhage, but causes an intense necrosis of tissue and an intense connective tissue reaction which results in a very large scar.

AUDREY GOSS MORGAN, M.D.

Boland, F. K. Abscess of the Liver. *Ann. Surg.*, 1931, xciv, 766.

The author reports 19 abscesses of the liver, 14 of which were amœbic and 5 of which were due to pyogenic organisms. The patients were negroes admitted to the Grady Hospital, Atlanta, during a period of five years. Of 25,000 white patients admitted to the same hospital during the same period of time, amœbic abscesses of the liver were found in only 2.

In only 5 of the cases reported was there a history of bloody dysentery preceding or accompanying the abscess formation.

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degenerative changes were characterized by necrosis. Of the accepted animals, seventeen showed complete necrosis of the gall bladder wall and eight presented incomplete necrosis with some evidence at times of reparative processes. In nineteen animals the changes were classed as regenerative. Such changes included hypertrophic, hyperplastic, and inflammatory reactions. Distinctive changes were noted in the gall bladder as early as twenty-four hours after the injection of the pancreatic juice. The changes in the wall of the gall bladder were somewhat similar regardless of the manner in which the pancreatic juice was introduced into the organ. The sudden introduction of 20 c cm. of pancreatic juice into the gall bladder produced more sudden changes than the introduction of smaller amounts by injection or choledochopancreatic intubation.

It was found that if pancreatic juice was introduced into the common duct for a short period of time the typical pathological picture of chronic cholecystitis was definitely present one hundred and eighty-six days later. By analogy the author reasoned that, in man, because of the continuous pathway between the pancreatic and bile ducts, it is possible for pancreatic juice to enter the gall bladder and produce pathological changes in that organ in a variable percentage of cases.

EARL O. LATIMER, M.D.

Crump, C. The Incidence of Gall Stones and Gall-Bladder Disease. *Surg., Gynec. & Obst.*, 1931, lxx, 447.

The author reports a statistical study based on 1,000 routine autopsies performed at the City Hospital of Vienna between January and July, 1927. Five hundred and fifty of the subjects were females. Eighty-seven and one tenth per cent were over thirty years of age, and 77.9 per cent were over forty.

Gall stones were present in 32.5 per cent of the total number of subjects, 37.8 per cent of the females, 26 per cent of the males, 25 per cent of the subjects who had passed the fourth decade of life, and 50 per cent of those who had passed the seventh decade. In 73 per cent of the cases the stones were of the inflammatory or common type.

Cholecystopathy (all pathologico-anatomical as well as function disturbances of the gall bladder) was found in 59.6 per cent of the total number of subjects, 58.4 per cent of the males, and 60.2 per cent of the females. With the advance of the decades its incidence increased from 20 per cent in the first age group to 77.6 per cent in the eighth decade. Chronic percholecystitis, the most frequent pathological condition, was found in 82.2 per cent of the subjects and chronic cholecystitis, which was next most frequent, was found in 50.2 per cent.

Primary carcinoma of the biliary tract occurred in 26 subjects—7 males and 19 females—and was associated with stones in all but 4. In 2 cases the growth was primary in the ducts.

Pathological conditions of the biliary tract were present in 41.3 per cent of the total number of sub-

jects, 34.9 per cent of the males, and 46.5 per cent of the females. The incidence increased with age. The most frequent condition was dilatation of the ducts, which was found in 50.8 per cent of the subjects, and the next most frequent was laceration of the papilla of Vater, which was found in 47.7 per cent.

Stones were discovered in the bile ducts in 78 subjects (24 per cent of those with cholelithiasis), in 6.6 per cent of the males and 8.7 per cent of the females. Their incidence had no relation to age. The most common site was the papilla of Vater (60.2 per cent of the cases) and the next most common site the cystic duct (48.7 per cent of the cases).

Cholesterosis of the gall bladder was present in 36.8 per cent of the subjects examined, 35.8 per cent of the males, and 37.7 per cent of the females. Its incidence was more or less constant throughout the age groups. If cholesterosis is considered a pathological condition, the general incidence of cholecystopathy is raised from 50.6 per cent to 76.1 per cent.

These figures are definitely higher than those found in similar studies recorded in the literature, but the author failed to note such marked differences in the incidence of the various conditions in males and females as have been reported by others.

EARL O. LATIMER, M.D.

Mason, J. T. Late Results of Surgical and Medical Treatment of Chronic Cholecystitis. *Ann. Surg.*, 1931, lxxv, 786.

Mason presents an analysis of the histories of 600 cases of chronic cholecystitis which were written from five to fifteen years ago. The high immediate mortality of 6 per cent he attributes in part to the fact that the importance of carbohydrate feeding in cases with liver damage was not appreciated at the time these cases were treated.

The ratio of females to males was 2:1. Thirty-five per cent of the patients were under forty years of age. The average age of the patients when they sought treatment was about forty-five years. Forty-three per cent of the females weighed less than 140 lb.

Localized pain or soreness was a common complaint, but only 18.5 per cent of the patients gave a history suggesting gall-stone colic. Seventy-five per cent complained of gastric disturbances. The most frequent gastric disturbance was food intolerance. Other common symptoms were belching and fullness in the epigastrium.

Gastric analysis was done in 402 cases. The free hydrochloric acid was above normal in only 6.7 per cent. In 24.3 per cent there was no free acid. In 31.3 per cent, the acidity was low, and in 37.5 per cent it was approximately normal.

In comparing 2 groups of 100 patients each, in one of which surgical procedures and in the other of which medical procedures were used, it was found that 10 per cent of the former and 6 per cent of the latter had died. However, attention is called to the fact that surgery was used only in the more severe cases.

these cases the herniation occurred on the right side. The hernia lies directly posterior to the xiphoid process.

The contents of diaphragmatic hernia vary with the size and position of the opening. In 737 of the cases reviewed the stomach was found in the hernia. In 60 per cent it was associated with other organs. In 71 per cent the colon and small intestine were found with other organs in the hernia.

In cases of hernia at the oesophageal hiatus operative repair is not urgent, but in cases of parasternal hernia it should be done as soon as possible because the colon is apt to be contained in the sac. In 11 of 56 cases of right-sided hernia collected by the author the only visceral tissue included in the hernia was of a part of the liver.

Of 210 patients with non-traumatic hernia who were under one year of age 75 per cent died before the end of the first month of life.

Of 176 surgically treated cases including 19 operated upon by Hedblom the hernia was of congenital origin in 55, acquired in 61, due to war injuries in 115 and due to trauma of civil life, chiefly knife stabs or blunt traumata in 186. Obstruction occurred in 36.3 per cent of those of congenital origin, 15.6 per cent of those which were acquired, 17.5 per cent of those due to war injuries and 20.2 per cent of those caused by trauma incident to civil life. These figures indicate that exclusive of herniations of the stomach through the oesophageal hiatus the hernia which are most apt to become strangulated are those occurring through small openings in the diaphragm.

Hedblom believes that a small hernia anywhere except at the oesophageal hiatus should be repaired even in the absence of symptoms. Temporary interruption of the phrenic fibers is of value in the treat-

ment of diaphragmatic hernia. In cases of large hernia in which it is impossible to approximate the edges of the defect extrapleural thoracoplasty may be indicated.

Of a series of 215 cases in which laparotomy was performed, the hernial opening was sutured in 129, reduced but not sutured in 37, not reduced in 33, and not found in 16. Of 167 cases in which thoracotomy was performed, the opening was sutured in 91, not sutured in 6, not reduced in 3, and not found in 7. Of 91 cases in which combined thoracolaparotomy was done, the ring was sutured in 81, not sutured in 3, and not found in 7.

In 246 cases operated upon by laparotomy, the mortality was 34.9 per cent, in 132 operated upon by thoracotomy it was 19.7 per cent, and in 89 operated upon by combined laparotomy and thoracotomy it was 31.4 per cent.

Of the 467 hernia in this group of cases, 149 were obstructed. Of the latter, 100 were operated upon by laparotomy, 23 by thoracotomy, and 26 by the combined route.

Primary laparotomy is indicated in all cases of obstruction. It is always indicated in cases of parasternal hernia and is usually indicated in cases of hernia in the oesophageal hiatus. In cases of fresh penetrating wounds of the thorax with prolapse of the abdominal contents, thoracotomy is the only approach to be considered. Combined thoracolaparotomy facilitates the operation, but has a much higher mortality than the use of the abdominal or thoracic route alone. The hernial opening may be simply sutured or a plastic operation with the use of fascia may be necessary. Following repair of the opening it is important to aspirate the air from the pleural cavity and re-establish normal physiological relations.

ALTON OCHSNER, M.D.

Lynch, F W A Five- to Fifteen-Year Follow-Up Study of 192 Cervical Cancers *Am J Obst & Gynec*, 1931, xvi, 550

The women whose cases are reviewed included 159 who had had no treatment for their cancer prior to their admission to the author's service and 33 who had had an operation elsewhere and were referred to the author for prophylactic treatment or treatment of an evident recurrence

The mortality in the first year was due in large part to the deaths of women with tumors of Grade 4. One year after treatment only 57.2 per cent of the women were living, and two years after treatment only 39 per cent survived. Between the second and third years the mortality was comparatively low, but between the third and fourth years more than one-fourth of the women who were alive at the end of three years succumbed to the disease. During the fourth year only approximately 10 per cent of those surviving died from cancer. There were more deaths during the first year than in the succeeding four years. The incidence of five-year cure was 20.8 per cent.

Forty-three (27 per cent) of the cancers were of Grades 1 and 2. Of the women with such lesions, 25 (58.1 per cent) remained cured for five years. Of 12 patients treated only by irradiation, 4 (25 per cent) remained cured for five years.

Of the women with cancers of Grades 3 and 4, 8 (7.1 per cent) remained cured for five years. The author says that persons apparently cured for years tend to die of cancer eventually. A recurrence is known to have developed subsequently in 2 (25 per cent) of the 8 patients with cancers of Grades 3 or 4 who were cured for five years.

The results of radium irradiation, even in inoperable cases, far surpass those of the ordinary panhysterectomy. In a series of 26 cases in which panhysterectomy was performed by competent surgeons no cure for more than four years was obtained in spite of postoperative irradiation.

The five year cures in the cases reviewed are tabulated as follows:

Grade of tumor	Cases	Treatment	Five-year cures	
			No	Per cent
1	14	Operation and irradiation	12	85.0
	3	Irradiation	3	100.0
2	17	Operation and irradiation	9	53.0
	9	Irradiation	1	11.0
3	71	Irradiation	8	11.3
	3	Irradiation and operation	1	33.0
4	42	Irradiation	0	0
5	43	Irradiation	4	12.1

E L CORNELL, M D

Ward, G G, and Farrar, L K P Reradiations in the Radium Therapy of Carcinoma of the Cervix Uteri *Am J Obst & Gynec*, 1931, xvi, 543

In cases of carcinoma of the uterine cervix the authors build up the patient's resistance, when necessary, by blood transfusion, give a test dose of radium usually between 2,400 and 3,600 mgm-hr

but occasionally as high as 4,200 mgm-hr, and carefully estimate the result two or three months later. Subsequent radiations and dosage depend upon the reaction obtained by the test dose. So far as possible, a personal monthly follow-up is carried out the five-year period of observation. Whenever signs of beginning recurrence are discovered, reradiation is done. The average dose ranges from 300 to 1,200 mgm-hr, depending upon the size and location of the metastases. Many instances of successful radiation of metastases occurring two, three, or four years or even longer after the initial treatment are recorded.

Of 170 patients with epidermoid carcinoma or adenocarcinoma of the cervix, nearly 50 per cent had more than 1 radium treatment, and of those who were reradiated, 26.5 per cent lived five years or more.

Adenocarcinoma of the cervix was found in 13 of 147 patients studied. Nine of the 13 patients were reradiated and 4 of the 9 lived five years or longer. The 4 patients who were not reradiated did not survive five years. E L CORNELL, M D

Mocquot, P, and Boquel, G Extended Colpohysterectomy by the Combined Vagino-Abdominal Route for Cancer of the Uterus (*La colpo hystérectomie élargie par voie combinée vagino abdominale pour cancer de l'utérus*) *J de chir*, 1931, xxxviii, 305

The technique of extended colpohysterectomy by the combined vaginal and abdominal route here described is derived from the procedure proposed by Quenu and Duval for the complete extirpation of the genital tract. One of its objectives is the suppression of all communication with septic cavities and the removal of the uterus and vagina in a closed sac. Therefore at the beginning of the operation the vagina is cut off at a convenient level, the upper end is hermetically sealed by an overcasting stitch and dissected, and the lower end is also closed. A second objective of the operation is the complete exclusion of the peritoneum by suture, and a third, union of the pelvic wound by first intention.

The history of the operation is outlined and the technique described in detail. The advantage of resecting the vagina at a chosen point at a suitable distance from the neoplastic lesions in healthy tissue is undeniable. This resection facilitates the abdominal stage and, according to Faure, is the chief advantage of the technique. The enlarged complete hysterectomy is not the modern type-operation for cancer which includes extirpation *en bloc* of the organ with the tumor, the lymphatic pedicle, and corresponding glands. The authors are satisfied with finding the principal glands and removing them if they are enlarged.

Although asepsis is less perfect than in the abdominal operation, most of the patients recovered without infection and some without elevation of the temperature. The operation requires little if any more time than the abdominal operation. The vagi-

GYNECOLOGY

UTERUS

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The t h r s e p o t f a s e n d t d
H L C M c k M D

The technique of perineal hysterectomy is described in detail. This operation is not intended to replace abdominal hysterectomy as the latter will always be preferable in the cases of young, thin women in good general health. The most important indication for perineal hysterectomy in cases of cancer or fibroma of the uterus is obesity. The women who have been subjected to this operation weighed between 80 and 90 kgm. Postoperative shock, infection, and cardiopulmonary disturbances are rare. The operation is indicated in (1) the cases of very thin women in poor general condition who are anemic from loss of blood and hence would not support the Wertheim operation, (2) the cases of women with cardiac and emphysematous condition in which the Wertheim operation is frequently followed by complications, and (3) cases in which a neoplasm has invaded the vagina. When fibromata are large the perineal operation permits the removal of all of them and establishes drainage of the parametrium. The operative mortality of the procedure is 4.5 per cent.

Pace

ADNEXAL AND PERIUTERINE CONDITIONS

Dodds, E. C. The Clinical Importance of the Sex Hormones. *Am J Obst & Gynec*, 1931, vii, 520

The author treated 62 cases of amenorrhoea with injections of sex hormone. Menstruation started in 10 of 32 unmarried women and in 18 of 30 married women. As a rule it began within a week or ten days after the treatment. In some cases the bleeding was at first very slight, but in others it amounted to a full period at once. The periods continued for at least six months and the patients noted improvement in their general health. In the author's opinion the tonic effect was due largely to suggestion.

In the cases of 5 women in the menopause, the daily injection of 10 units of the hormone caused marked improvement. The extract apparently possesses definite powers of controlling the vasomotor and general symptoms of nervous irritability.

The author has found the Aschheim Zondek test very accurate. It was incorrectly positive in only 1 of 208 specimens and was negative in the cases of only 4 of 126 women who were pregnant. One of the pregnant women with a negative test miscarried three weeks after the test, but the others went to term.

F. L. CORNELL, M.D.

Scaglione, S. The Interstitial Cell of the Ovary in Inflammatory Diseases of the Adnexa (Le cellule interstiziali ovariche nelle forme infiammatorie degli annessi). *Riv Ital di ginec*, 1931, vii, 383

In ovaries removed at operation in fifteen cases of inflammatory adnexal disease, Scaglione was able to distinguish interstitial cells from other ovarian cells of a histocytic nature by means of vital staining. Similar studies were made on normal rabbit ovaries and rabbit ovaries in which inflammatory processes had been induced. The rabbit ovaries in which inflammation had occurred and the ovaries

removed at operation in the clinical cases of adnexal inflammation showed an increase of some of the elements of the reticulo endothelial system and, when the processes had been of long duration, an increase in the interstitial cells accompanied by a marked increase of the same elements of the reticulo endothelial system.

Scaglione concludes that the function of the interstitial cells is protective. The origin of these cells is uncertain.

EUGENE T. LEDDY, M.D.

Lucarelli, G. A Contribution on the Morphology and Classification of Primary Epithelial Tumors of the Ovary, Especially with Regard to Malignant Epithelial Tumors (Contributo alla morfologia ed alla classificazione dei tumori epiteliali primitivi dell' ovaia, con particolare riguardo ai tumori epiteliali maligni). *Riv Ital di ginec*, 1931, vii, 406

Most classifications of ovarian tumors have a histogenic basis, but as there is great confusion regarding the nature and genesis of normal ovarian tissues these classifications show little agreement. Lucarelli therefore suggests the following morphological classification:

1 Solid epithelial tumors

A Benign Adenoma, papilloma, benign hypernephroma, endometrioma

B Malignant Adenocarcinoma, medullary carcinoma, scirrhous carcinoma, folliculoid and cylindromatous carcinoma

2 Cystic epithelial tumors

A Benign Simple cystadenoma, papillary cystadenoma, cystic endometrioma

B Malignant Carcinomatous cystadenoma, cystic carcinoma

On the basis of the histogenesis he classifies ovarian tumors as follows:

1 Intrinsic ovarian epithelioblastomata (those based on malformation are all amartoblastomata*)

A Germinative tumors Superficial papilloma, simple cystadenoma, cystadenoma (simple and papilliferous), adenocarcinoma, medullary carcinoma, scirrhous carcinoma, cystic carcinoma, folliculoid and cylindromatous carcinoma

B Tumors of the interstitial cells (?)

2 Extrinsic ovarian epithelioblastomata (all coristoblastomata) Simple wolffian cystadenoma and papilliferous cystadenoma, malignant wolffian cystadenoma, hypernephroid tumors of the ovary, endometrioma

*According to Albrecht, the term "amartoma" means a tissural malformation due to the isolation of a tissural anlage in the organ to which the germ layer belongs, for example, an angoma of the liver in the liver. The term "coristoma" means a malformation due to the inclusion of a germ layer in an organ to which the germ layer does not belong, for example, the inclusion of fragments of the adrenal in the liver.

EUGENE T. LEDDY, M.D.

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injection of lipiodol Simple roentgen examination without either of these procedures is of value chiefly for the demonstration of foreign bodies of the uterus and vagina, calcified uterine myomata, and dermoid cysts of the ovary which sometimes contain opaque bodies such as teeth and bones

For the induction of pneumoperitoneum, oxygen or carbon dioxide is injected into the peritoneal cavity The patient lies on her abdomen with the pelvis elevated at an angle of about 45 degrees About 500 c cm of the gas are injected without pressure As the interpretation of the roentgen picture is difficult and the procedure has been followed by peritoneal complications and even by death from syncope or gas embolism, the use of pneumoperitoneum has been given up by a great number of gynecologists

Since the introduction of lipiodol in 1925, uterosalpingography with the aid of this substance has come into very general use A number of other substances were tried before lipiodol, but were found impractical Lipiodol is perfectly harmless and appears to be non irritating to the mucous membrane of the uterus and tubes However, its injection is a minor gynecological operation and should be carried out with the strictest asepsis It should be done in the hospital rather than in the office, and the patient should be kept in bed for from twenty-four to forty-eight hours to prevent the re-awakening of a possible latent infection As a rule, anesthesia is unnecessary to prevent pain for if the pressure is controlled by a manometer there should be no pain Occasionally, however, it is necessary to induce local anesthesia of the uterus by infiltrating the sacro-uterine ligaments with from 10 to 20 c cm of a 1 per cent novocain solution in order to overcome spasm of the cornua of the uterus This is sometimes the only way of determining whether an obliteration of the tubes is organic or functional The uterus can stand a pressure of from 30 to 40 cm Hg without rupture, but the author never uses a pressure higher than 25 cm Hg Great care is necessary If a pressure of more than 20 cm Hg is employed, the injection should be made very slowly If the injection is made under pressure, the cervix should be closed as hermetically as possible The author uses a 10 c cm Pauchet syringe which he has had changed into an instillation syringe It is best to make the injection under screen control The amount of lipiodol injected depends upon the size of the uterus In some cases the uterus will hold from 20 to 30 c cm, but when it is aplastic or very contractile it will hold only 3 or 4 c cm If too little lipiodol is injected the uterus may have a lacunar appearance suggesting a pathological condition when no such condition is present The examination should not be made until the uterine mucosa is repaired after menstruation The best time is the second week of the menstrual cycle

To interpret the roentgenograms the examiner must be thoroughly familiar with the normal appearance of the uterus and tubes The author includes in

his article roentgenograms of normal and diseased uteri and tubes Normally, the uterus has the shape of a triangle with its apex downward It is distorted and changed in size by various pathological conditions However Cotte believes that hysterosalpingography is of theoretical rather than practical interest in a number of conditions in which it has been used extensively, such as anteversion and retroflexion of the uterus, uterine tumors, and metorrhagia The findings characteristic of these conditions are noted only at a stage of the condition in which the diagnosis can be made by clinical examination

The method is of value chiefly for the demonstration of permeability or impermeability of the tubes The author has used it in 250 cases and Schultz has used it in from 500 to 600 cases without unfavorable effects, but it has been known to cause or re awaken inflammation, and accidents of mechanical origin such as injection of the utero ovarian venous plexuses and rupture of the tubes have occurred While some of the accidents were doubtless due to poor technique, the method should be used only when the diagnosis cannot be made clinically It is contra indicated in pregnancy, infection of the genital tract, and uterine hemorrhage

In sterility it is the sovereign method of diagnosis and promises to give results which will be of great value in determining the method of treatment It shows whether the tube is or is not permeable, and reveals the site of any obstruction It shows also whether the wall of the tube has normal contractility and therefore whether salpingotomy will be effective or whether a considerable part of the tube should be resected If the wall has lost its normal contractility, resection of the ampullar part of the tube with salpingostomy on the isthmic part is better than simple salpingotomy The former operation is more apt to be followed by pregnancy Salpingography may also reveal impermeability of a functional nature, and in some cases it overcomes spasm

In certain cases of dysmenorrhea the method shows a condition requiring surgical intervention The author reports illustrative cases, in one of which the examination revealed hydrosalpinx and sclerocystic oophoritis on the left side and in another of which it disclosed two adenomyomata of the cornua of the uterus AUDREY GOSS MORGAN, M D

Franke, O von The Early Diagnosis of Carcinoma of the Female Genitalia (Die Fruehdiagnose der Genitalkrebe der Frauen) *Med Klin*, 1931, 1, 491

The author cites Winter as reporting that procrastination in the treatment of carcinoma in patients under his care during the period from 1911 to 1920 could be attributed to physicians in 21.5 per cent of the cases, to midwives in 3.4 per cent, to quacks in 0.6 per cent, and to the women themselves, through ignorance and carelessness, in 74.5 per cent He emphasizes that efforts to increase the frequency of early treatment must be directed especially toward women who have borne children as in such

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pla red With o With t a Pedl l into th
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d o l l g c 93 xxx 53

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EXTERNAL GENITALIA

Stein I F d Cope E J Trich m v gl
nall (Donn) A Pr liminary Study Am J
Obi & Gyn 93 n 368

Infe t n by th trich m nas g ls s asso
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authors describe two new med a on which it grew
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Corn H E L Goodman I J nd M tch M
M The C ltur In l d n and Treatm tof
Tri hom nas vaginali Am J Obi & Gy
93 xx 360

Trich mo as vag n h infect n s appar ntl be
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Th findings f the th s i e t gati ns ar
summariz d as f llo s

1 D t o e b th with human serum w s u d
u succ ssfully as a med um fo grow ng t hom n
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The Lynch m di m pla n mod fi d w th hy
dr ele o cy t f d was very good

3 Th o ga m will grow on artificial media as
w ll n winter as n summ r

4 Infecti n w th the t chom nas ag ls may
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5 Of a ere f 581 pregn t w m n 10 13 per
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6 Th n f ction is pe h p d pe dent upo u
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7 Th tri homo s v g als s does n t pr d ce
symp t ms i all cases In nly 11 f 38 pos t ve
cas s ere sympt oms p s nt

8 The d gno i s f e t n by the trichomonas
vag nalis cannot b m d fr m the cha acter of the
disch rg alone

9 I rpe al mo b d ty is n t nc e d b the
p senc f the trich mon s v g l

o Th rvic l r s on menti ned by K l egm n
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1 Th modified K l egm n t e tment h g en
th best results

2 A cure sh ld t b p n c d until the
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MISCELLANEOUS

Cott G Roentg Diag ost in Gynecology (Le
d gn u rad l g q gy e l g q) Gy e l
61 193 u 93

Roentge e m t w s n t f m h i n the
d gn s s of gynecol gic l d se se u t l the int o-
d ct on of p umopent um and the intra ute ine

A 1:1,500 solution of percaïne in a 0.5 per cent salt solution has a specific gravity usually lower than that of the cerebrospinal fluid. The specific gravity of a 0.9 per cent solution is nearly always higher than the specific gravity of the cerebrospinal fluid. Colomb used a 0.5 per cent solution. The osmotic pressure of the cerebrospinal fluid is higher than that of this anæsthetic solution. At first, in the course of slow injection without splashing, the anæsthetic has a tendency to rise like oil on water. Then, if the fluids have not been stirred up, they diffuse according to the laws of osmosis. The solution being hypotonic, the osmosis occurs, not from the anæsthetic toward the cerebrospinal fluid, but from the cerebrospinal fluid toward the hypotonic solution. Therefore high diffusion toward the bulb is prevented.

Half an hour before the operation the patient is given 1 ctgm of morphine with 0.1 mgm of scopolamine. Further to combat the fall in pressure,

6 ctgm of ephedrine are given, 1 dose just before the induction of the anæsthesia and another before the operation is begun or fifteen minutes after the induction of the anæsthesia.

In gynecological cases the Trendelenburg position is of advantage with the use of percaïne as in this position the patient has less tendency to vomit. In obstetrical cases the action of percaïne on tonus and the anterior roots permits easy dilatation while preserving the uterine contraction. Hence it is of advantage in the induction of labor by the Delmas method. The anæsthesia lasts about two hours. The dilute solutions are only slightly toxic and when a hypotonic solution is used the height to which it extends may be controlled. It may be localized in the lower roots by the Trendelenburg position. The Jones method seems to be the best. The injection must be done very slowly and must be made low.

PACE

Klaften, C Retinal Detachment in Eclampsia (Ueber Netzhautablosung bei Eklampsie) *Med Klin*, 1931, 1, 580

Changes in the eyegrounds are not infrequent during pregnancy. Schiotz has re-awakened interest in retinitis gravidarum and amaurosis eclamptica. In his studies of 8,400 women during pregnancy and the puerperium, he found 180 cases of eclampsia and threatened eclampsia and among the latter 27 cases of hæmorrhagic retinitis. Detachment of the retina was diagnosed in 7 cases, and in 4 of these was associated with retinitis. Since 1885, when von Graefe reported the first case of retinal detachment associated with retinitis of pregnancy, 60 similar cases have been published.

If an examination for changes in the eyegrounds were made in all cases of toxæmia of pregnancy it would frequently reveal albuminuric retinitis, neuroretinitis, papillitis, or retinal oedema. Detachment of the retina as well as other affections of the eye associated with pregnancy usually become cured immediately after delivery. This is easily understood when the syndrome of eclampsia is explained on the basis of angiospasm.

The author reports a case of retinal detachment occurring in a thirty-year old tertipara. Ten years previously, the patient had an attack of scarlet fever two months after a spontaneous delivery. In her last pregnancy, which was preceded by an abortion, oedema involving the lower extremities, the abdominal skin, and the eyelids developed in the eighth month. Clinical examination showed a blood pressure of 230 mm Hg. Hypostenuria appeared. The urine was found to contain large amounts of albumin and a large number of hyaline and granular casts as well as erythrocytes, leucocytes, and renal epithelial cells. The non-protein nitrogen was 80 mgm per 100 ccm. The eyegrounds of both eyes showed neuroretinitis and retinal hæmorrhage. With an increase in blood pressure, complete amaurosis due to bilateral complete retinal detachment suddenly developed. These acute symptoms indicated immediate interruption of the pregnancy, and the patient was delivered by metreurysis.

The severe complications in this case were attributed to an exacerbation of chronic nephritis (following scarlet fever) with a superimposed nephropathy of pregnancy. After delivery, the symptoms soon disappeared and the condition of the kidneys improved. Even the eye signs disappeared rapidly. The complete amaurosis vanished, and two weeks later the patient was able to see again, although only as through a mist. After seven weeks the retinae were again attached in both eyes, but atrophy of the optic nerve with visual acuity of 6/60 and 6/18 remained. Several months later when the patient had again become pregnant, therapeutic abortion and sterilization were done because of the danger of exacerbation of her previous condition. She presented also clinical evidence of luteal aortitis.

The author considers retinal detachment an indication for the interruption of pregnancy. BODE (G)

Greifenstein, J Eclampsia and the Later Fate of Previously Eclamptic Women (Ueber Eklampsie und das spätere Schicksal ehemals eklamptischer Frauen) 1931 Bonn, Dissertation

This report is based on all of the cases of eclampsia seen at the University Clinic of Bonn in the past eighteen years. The frequency of eclampsia was 1.08 per cent (212 instances in approximately 20,000 births). Thirty-three of the 212 patients died during the original attack. Seventy-five could not be traced. Sixty-nine women were re-examined at the clinic and 35 returned satisfactory answers to letters of inquiry. Of the 69 women re-examined, 2 have since died from intercurrent affections. Forty-one of the 69 women have not since become pregnant, but 28 have had a total of 41 pregnancies. The eclamptic condition recurred in only 1 case, but 4 patients suffered from pronounced oedema. Sometimes the oedema was associated with headache or the appearance of traces of albumin in the urine. A disturbance of vision was present in 1 instance. Forty-four of the women are entirely well at present, 9 still show a little albumin in the urine, 8 have some oedema, and a few complain of headaches, weak memory, and poor vision. Of the 35 women from whom information was secured by letter, 20 continued to suffer from headache and poor vision for longer or shorter periods following their discharge from the hospital. Twenty-two of this group became pregnant again, and in only 9 was the course of pregnancy entirely free from symptoms. Thirteen had some oedema, 2 noted a disturbance of vision, and 1 had an eclamptic attack.

Therefore, of the 104 women who were followed up, 54 have remained without further pregnancies. Of these, 42 were primiparæ. In the 78 subsequent pregnancies, a recurrence of the eclampsia developed twice, its incidence therefore being 2.6 per cent. More than half of the women were later in apparently perfect health. The rest suffered largely from nervous manifestations, but some of them exhibited also signs of a kidney disturbance with a course resembling that of a nephrosis. KESSLER (G)

Baird, D The Anatomy and Physiology of the Upper Urinary Tract in Pregnancy and Their Relation to Pyelitis. *J Obst & Gynec Brit Emp*, 1931, XXXVIII, 516

Of 1,000 women admitted to the Glasgow Royal Maternity and Woman's Hospital, urinary infection was found in 425. Of the latter, 163 were suffering from pyelitis, 99 from a toxæmia probably due to urinary infection, and 163 from a slight urinary infection which did not affect the obstetrical condition.

In order to determine the frequency of urinary tract infections in pregnancy, the author made post-mortem examinations of the ureters of women dying during pregnancy or the puerperium. Thirteen of the women were primipara and 13 were multipara. Of the primipara, dilatation of the right ureter was found in 13 (slight in 3) and dilatation of the left

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

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C l B t l C k M h 93 xx 25

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Lebedeff A A P r t l Co vulsiva Gra id rum
T l e a (P t u l g d r u m t o)
G y l d b i 93 xx

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w e r o f t h e a t s a d o e f i b e p y c n h a b t u)

D t u b a n c e d e l p m e t d u g p b e r t y
(m i n u t r i o n d l j e d p u b r t y)

3 Chro c f c i o f n i c t o n (e p a t o r y)
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s o m i a d y p n e o m i t g)
5 L e u c o y t (n e s i n m o n o c y t e)
6 P t s l k a t t a c k f c g h a n g b e g n g
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7 F l u e o f s y n p t o m a t e t t m n t
8 I m p o e m e n t d e u f l l g h s p t i z a
t o n a n d p t e t h p v (h r s e s r u m i n j t)
9 I m p o m n t n d c e c r n g p o m t t y
f t e o n s t o f p u e e p e c t r a n a d a n a s a l
d s c h a g e

T h e j m p t m s a e d u e t o t h m e c h a n a l f l e c t
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P o p h y l i s d e p e d s u p o n p r r e g u l t o o f
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t t m a g r d) f h m d 93 x u
53

T h e t h d s c u e t h e q u t s t o w h n
t h a p e t c a b o t i o o r p r m a t e d l e r y i t o b e
a d d i n t h e t o x æ m o f p g c y t s a t h
l i f e f i t h m t h r

I f d i n t o x æ m f p e g n y a d s t r b n c e
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d i s c u s t h e y d o m e o f t h t o x æ m a n d
t h e s l a b o a t r y a d s h e m p l o y e t b
l s h g t h e d g n o i G u p g a l l o f t h r o g n e d
t y p e s f t æ m a t g t h e d i t n g u i s h e s t h e e
c l i c l t g e T h e f i t t g e c h a r c t r i z d
h i f l y b y n u s n l m u t i g d t h s c o d b y
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t h d i t h e f i n l t a g l t u p o a d m

T h e o p p o r t n e t i m f i t h a p e u c c b o r t n r
p e m t u e d l r y m t b e d i t m u e d c b
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d t h l b o r a t y f i n d i n g s I t e f e n w i l l o f
c r s e b e i d c a t d b e f o t h e r e s e r v e g r f
t h e m t h r i e x h a u t d

I n c l u s t h t h g r e s a s u m e f s e r l
c a s e s t r e a t d i n h s c l a d d s c u s e s t h e d
r e s l t f a c M C v M D

mask a ureteral or renal stone or renal tuberculosis. Hematuria with or without fever is a frequent sign of pyelonephritis.

The importance of early recognition of the condition by uroselectan pyelography and early treatment is emphasized. As a rule there is fever for a day or two. This is reduced by rest and the forcing of fluids. Throughout the remainder of the pregnancy large doses of potassium citrate and urotropin should be given. Cystoscopic treatment consists in draining the renal pelvis, washing out the pus with boric acid solution, and instilling from 3 to 5 c cm. of a 1 per cent solution of silver nitrate.

Tuberculosis of the kidney during pregnancy is likely to be of a fulminating character and cause destruction of the kidney in a few months. In this condition immediate delivery and nephrectomy are indicated.

Calculi are less common than infection in pregnancy, but when a large stone is present in a ureter or renal pelvis, pyonephrosis is also present. When the stone is large, the pregnancy should be interrupted and nephrectomy performed later. When the stone is small, it may be removed by operation without interruption of the pregnancy.

After delivery in the authors' cases the care of the urinary tract is continued in the urological clinic and infections are treated with hexamethylenamin, the forcing of fluids, and rest. Recovery usually results within four months.

LEOPOLD GOLDSTEIN, M D

Rabinowitch, I. M. Pregnancy and Diabetes, with Special Reference to the Carbohydrate Metabolism of the Placenta. *J Obst & Gynec Brit Emp*, 1931, LVIII, 601.

The presence of glycogen in the animal placenta was first demonstrated by Bernard in 1859. Reports with regard to the human placenta are rather rare and have dealt with qualitative rather than quantitative determinations.

Glycogen is abundant in the placenta, but for the most part is deposited in the maternal portion. As the liver glycogen increases, the storage of glycogen in the placenta decreases. The concentration of glycogen in the uterus is at the maximum at childbirth. Glycogen is present in the uterus and fallopian tubes also in the non pregnant state.

The placental glycogen is remarkably stable. Insulin in very large doses has little effect upon it. The mother can draw upon it only when there is a severe disturbance of metabolism.

In diabetic women pregnancy is relatively rare. Since the introduction of insulin therapy, the incidence of abortions, premature labor, and stillbirths has greatly decreased.

The author reports the case of a diabetic woman thirty three years of age who was admitted to the hospital in the seventh month of pregnancy when she was recovering from a severe acidosis. After proper treatment, cesarean section was performed under ether anesthesia. The child weighed 3,178

gm. Prior to the operation the blood sugar was 0.181 per cent, and half an hour after the operation it was 0.312 per cent. Under treatment with insulin it was reduced by the following morning to 0.090 per cent and convalescence was uneventful.

As even with careful control of the diet more insulin was required as the patient neared term, it is evident that fetal insulin is of little value to the mother even at term. Lactation, however, was definitely effective, probably because of withdrawal of glucose for lactose formation. Lactation was quite profuse for ten days although the child was not nursed, and during this time it was possible to increase the diet and decrease the insulin.

Determinations of the glycogen in the placenta by the method of Wood and Berry showed the content to be 1.56 per cent. As the greatest percentage of glycogen is in the maternal portion and separation takes place in a manner which leaves a considerable amount of that portion in the uterine cavity, the glycogen content of the placenta in this case was exceptionally high. Apparently the occurrence of severe acidosis in the last trimester of the pregnancy with evident depletion of glycogen in the liver had no effect on the placental glycogen.

Specimens of arterial and venous blood taken from the umbilical cord immediately after the placenta was emersed in hot alkali showed that while blood going to the fetus was hyperglycemic, the blood leaving the fetus was normal. This observation suggests that insulin production in the fetus is efficient.

Other observations made in this study revealed that the diabetes was under ideal control, that testing arterial and venous blood from the umbilical cord might be of value to determine a tendency toward the disease in the infant, and that a high blood sugar in the mother furnishes a continuous supply of glucose to the child.

DONALD G. TOLLEFSON, M D

LABOR AND ITS COMPLICATIONS

Ivy, A. C., Hartman, C. G., and Koff, A. The Contractions of the Monkey Uterus at Term. *Am J Obst & Gynec*, 1931, LXII, 388.

The authors describe the manner in which the wave of contraction passes over the parturient simplex of the monkey and assume that a similar action occurs in the very comparable human uterus.

From a constant quiescent area slightly ventral and cranial to the insertion of the tubes, elliptical, concentric waves of contraction pass medially to meet in the midline and cranial border of the uterus whence they pass caudally, involving first the lower segment and finally the cervix of the uterus.

Such contractions, after they reach the midline, follow the conducting bundle postulated by Hofbauer (1930). This is not macroscopically demonstrable in the monkey. The course of the contractions is that which would be expected on the basis of the homologues cited and the embryological development of the parts of uterus and tubes. The placental

ureter; 10 (slight in 1). Of the multi-parous dilata-
tion of the right ureter was found in 12 (slight in 6)
and dilatation of the left ureter in 9 (slight in 4).
As a rule the dilatation was less marked the earlier
the pregnancy but rarely the second third and
fourth months there was demonstrable dilatation.
Specially of the right ureter. In many instances
the right ureter was markedly obstructed the
pelvic brim in the latter months of pregnancy. In
some cases the sheath exceeded the diameter of
the ureter if it had been considered at a right
time by the proliferating of fibrous tissue between
the muscle bundles. The dilatation of the
ureter were large and broad and there as fairly
marked oedema. The dilatation was equally
advanced in primigravidae and multigravidae.
The ureters of 9 men and 10 women were studied
as controls. In 2 of these women dilatation of the
ureters was found but the dilatation did not
the dilatation of the ureters was not observed in
the pregnant men. The dilatation of the
ureters was not observed in the pregnant men.
The dilatation of the ureters was not observed in
the pregnant men.

I digocarm tests showed excretion were
carried out in the cases of 43 men and 10 women
stage of pregnancy. All of the women showed
some impairment of function compared with
normal in pregnant women. In some cases the
at least some of the patients extreme delay of
excretion was found. The patients gave soft stools
after the catheter had been introduced. The
of from the stomach. The dilatation of the
last at the stage of pregnancy the dilatation was
the pelvic brim. In some cases the dilatation of
excretion was found ten days later. The dilatation
probably because of the dilatation of the
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an almost intact neonatal dilatation of the
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with high temperature and a rapid pulse. The dilatation of the
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rate and the temperature and saturation of the dilatation of the
Catheters have been found to be dilatation of the dilatation of the
four days without any dilatation of the dilatation of the
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hours with boracic acid solution or a 2.4000 solution
of acriflavine.

In the review of the literature with uninfected un-
Duncan and Seng demonstrated dilatation of the
ureter in the sixth week of pregnancy in the cases of
multi-parous and the tenth week of pregnancy
the cases of primigravidae. The dilatation of the
physiological points of slight obstruction of the
lower end of the ureters. Holbuer's dilatation of the
that the hypertrophy he describes; the dilatation of the
obstruction in the ureter. As the hypertrophy
changes although the prominent at the lower end
of the ureter occurs throughout the dilatation of the
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Duncan and Seng that they present a physiological
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contractile power and pressure of the dilatation of the
to the dilatation of the dilatation of the dilatation of the
increased ascularity and congestion of the cervix
and pampiniform plexus. The dilatation of the
ureter in the pelvis is a result of the growth of the
ureters which are equally in all directions.
Linking of the ureters may be caused by the
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Even when the dilatation of the dilatation of the dilatation of the
be not clinically signs symptoms indicating in the
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seven months likely to be overlooked. In the dilatation of the
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methods presents many difficulties. The dilatation of the
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every maternity hospital should have a urological
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at all, and in critical literature it is discussed infrequently and always unfavorably.

Mueller states that replacement of amniotic fluid is by no means the treatment of choice in every case of premature rupture of the amniotic sac. It should be used exclusively in cases in which immobility of the fetus will render version difficult or fetal asphyxia results from the loss of amniotic fluid and delivery cannot be performed at once. In order to prevent air embolism, the tube to be introduced into the uterus must be filled and its lower end closed before its insertion. However, the author believes that the introduction of a few air bubbles is not associated with much danger. The danger of premature separation of the placenta as the result of penetration of amniotic fluid between the uterine wall and the amnion may be prevented by injecting the fluid very slowly and under constant control of the fetal heart sounds. The fear that the refilling of the uterus might cause changes in the musculature leading to uterine rupture or atonic postpartum hemorrhage has not been justified. The distention of the uterus does not exceed the stretching of the muscle cells before the rupture of the amniotic sac. In general, no more than 1,000 c cm of fluid are employed, 500 c cm in the balloon and 500 c cm to fill the uterine cavity.

In the Koenigsberg Clinic a Duehrssen bag is used as a metreurynter. Through its conducting tube a smaller tube is introduced which extends through the balloon and opens at the middle of the base without protruding above the level of the dome of the balloon. The insertion of the metreurynter and the replacement of the amniotic fluid are performed under complete anesthesia. After its introduction into the uterus, the balloon is filled with 500 c cm of sterile physiological salt solution and the uterus is filled with an additional 500 c cm. This procedure has been found of special value in cases of fetal asphyxia from prolapse or compression of the umbilical cord.

Premature separation of a low implanted placenta has been treated with excellent results by artificial replacement of the amniotic fluid. Also suitable for this treatment are all cases in which because of incomplete cervical dilatation, spontaneous delivery cannot be expected. After the procedure internal version and extraction may easily be performed. Replacement of the amniotic fluid should be done as a prophylactic measure when there is a possibility that fetal respiration may be disturbed or that the further progress of labor may require version. Intra uterine death of the fetus, infection, marked pelvic contraction (true conjugate less than 8 cm), placenta previa, and premature separation of the normally implanted placenta are contra indications. In one case the method was used in the management of marginal placenta previa in order to facilitate internal version after complete dilatation of the cervix had been brought about by metreurynter. After the filling of the uterus increased uterine contractions were usually observed. The method fails

when the balloon is expelled and delivery does not occur spontaneously and cannot be effected rapidly by operation.

In two cases fetal death occurred soon after the use of the procedure. In one case the fetus had already sustained irreparable injury. In two other cases the pressure of the metreurynter increased the compression of the placental vessels in the presence of velamentous insertion of the umbilical cord and it was impossible to save the life of the child. After expulsion of the bag spontaneous delivery occurred in only three cases, in one a dead anencephalus was expelled. Forceps delivery was possible in two instances. Symphysiotomy was performed once, and in one case craniotomy was done on a dead fetus. In all other cases extraction was performed in breech presentations or following version. In one case, fractures of the humerus and femur, and in four cases, death of the child, occurred as the result of difficult extraction. Of a total of twenty-four children whose prospects for life were extremely poor without replacement of the amniotic fluid, fourteen were saved by this procedure and left the clinic in good health. Two mothers died as a result of infection which was present before the introduction of the metreurynter. The twenty-two others had a normal puerperium. Manual removal of the placenta was necessary in three instances. The blood loss was generally less than the average, there were no severe hemorrhages. BERGEMANN (G)

Hofstein and Petrequin. The Effect of a Salt-Free Diet on Labor (*De l'influence du régime déchlorure sur l'accouchement*). *Gynec et obst*, 1931, LVII, 133.

The rapid and relatively painless character of the labors of four pregnant women who, for various reasons, had been placed on a salt-free diet during pregnancy prompted the authors to investigate the effect of sodium chloride upon parturition. The first stage of labor in these women (two primigravidae, a secundipara, and a tertipara) lasted three and a half hours, four and a half hours, three hours and twenty-five minutes, and two hours and forty minutes respectively.

The authors first determined the blood-chloride values of seventeen women at the onset of labor. No definite relationship between the chloride content of the blood and the length of labor was apparent. In the majority of the cases the chloride values were normal, whereas labor in these cases was sometimes slow and sometimes rapid.

The authors then selected seven other patients and placed them on strictly a salt-free diet for a period of two weeks preceding the onset of labor. The blood chloride determinations on this group made at the beginning of labor were also normal. In the cases of the five primiparae the first stage of labor varied from two hours and forty-five minutes to five hours, and in the cases of the two multiparae it was one hour and six hours respectively. The authors believe that the apparent shortening of the length of the first stage was due, not to an ionic

(1928), and Pieraggi (1929), and present a table showing the treatment and the results

In 138 cases retention occurred. There is no way of differentiating clinically between hæmorrhage with and without retention. This differentiation can be made only by intra-uterine examination.

Neither the patient's age nor the number of pregnancies nor the history of the delivery or puerperium throws any light on the cause of the hæmorrhages discussed. It is probable that in the great majority of cases there is infection. This may be entirely latent. Sometimes a latent infection becomes manifest when the barrier of leucocytes is broken down by operation or curettage. Keiffer thinks the cause of the hæmorrhage is exhaustion of the musculature of the uterus, probably originating in the central nervous system. In cases with manifest infection, bacteriological examination shows predominance of streptococci. Occasionally, the hæmorrhage seems to be caused mechanically by detachment of the retained fragment of placenta and expulsion or removal of the fragment is followed by uneventful recovery. In some cases there is a beginning infection localized superficially at the retained fragment, and curettage stops the hæmorrhage and the infection. In other cases serious infection is present before the hæmorrhage occurs and is not arrested by removal of the fragment and curettage.

As there is no clinical advantage in classifying the cases into those with and those without retention, the authors propose classifying them as benign, moderate, and severe. This classification is by no means absolute, but may be of aid in deciding on the treatment. The Baudelocque school has recently recommended immediate hysterectomy in all severe cases without any attempt at medical treatment, but experience has shown that there are severe cases in which recovery will occur under medical treatment alone. Therefore the effort must be made to differentiate cases of the latter type from those requiring hysterectomy.

In the cases with retention which were studied by the authors, the mortality was 22.06 per cent, and in these without retention it was 10.81 per cent.

AUDREY GOSS MORGAN, M.D.

Hobbs, R. Puerperal Sepsis. The Importance of Early Treatment. *Brit. M. J.*, 1931, II, 744

Hobbs believes that the most effective treatment of puerperal sepsis is the glycerine irrigation described by him in previous articles. He attributes the frequency of unsatisfactory results in this condition to (1) too much emphasis on the fact that the phenomena of the so called normal puerperium are of a physiological character, (2) the widespread erroneous belief that puerperal sepsis is always characterized by fever due to bacterial infection of the raw uterine surface, (3) delay of treatment and failure to continue it until every symptom and sign of sepsis has disappeared and the uterus has been restored to its normal condition, and (4) failure to recognize

the importance of early symptoms and signs. He regards fever alone as a thoroughly unreliable index of early pathological changes in the uterus.

The glycerine irrigations should be used at the earliest signs of what has ordinarily been considered merely a mild postpartum infection. Of importance among such signs are moderate pyrexia, uterine colic, and abnormal lochia.

The author reviews 208 cases in which the glycerine treatment was found of value.

GOODRICH C. SCHAUFFLER, M.D.

Bryce, L. M. The Bacteriological Findings in Puerperal Sepsis. *Med. J. Australia*, 1931, II, 345

Bryce discusses three types of puerperal sepsis and the related bacteriological findings.

1. The very severe, generalized, and often fatal type in which septicæmia due to a specific organism is usually a feature. The importance of hæmolytic, aerobic streptococci as the chief causative agent of this condition is generally recognized, but there are a few who believe that anaerobic streptococci play an important part. Attempts should be made to isolate anaerobic streptococci if their presence is suggested clinically and no growth occurs on ordinary aerobic culture media. In a few cases the staphylococcus aureus, the bacillus coli, or the bacillus welchii may be the infecting organism. The use of any form of intravenous therapy alleged to be especially inimical to a particular organism depends for its value on a knowledge of the infecting organism present.

2. Localized disease of all degrees from comparatively mild to severe prolonged illness which can be shown to be due to infection by a single definite pathogenic organism. In these cases, in which it is possible to make a bacteriological examination of the lesion, hæmolytic streptococci are the chief infecting organisms although anaerobic streptococci and occasionally other bacteria will be encountered. Demonstration of the presence of hæmolytic streptococci in the uterus has a three-fold value. It influences the prognosis, it suggests certain forms of treatment and contra indicates others, and it may prevent spread of the infection by indicating the need for isolation of the patient.

3. Mild morbidity lasting a short time, which includes the majority of puerperal febrile conditions of genital origin. These are probably not due to definite infection by any specific organism.

The author sums up the value of bacteriological investigations of the puerperal uterus as follows:

1. If aerobic hæmolytic or anaerobic streptococci are found in pure culture or large numbers, the condition must be regarded as serious.

2. If these organisms are scanty or found in mixed cultures their presence is probably not of great importance to the individual patient, but they are capable of infecting others and the patient should be segregated.

3. If a mixture of relatively unimportant saprophytes is the only finding, treatment directed toward

GENITO-URINARY SURGERY

ADRENAL, KIDNEY, AND URETER

Meyer, J., and Frumess, G. Tumors of the Suprarenal Gland, with Special Reference to Carcinoma of the Cortex. Report of a Case. *Arch Int Med*, 1931, LVIII, 611

A girl thirteen years of age complained of chronic constipation, pain in the chest and the abdomen, dermatitis, indigestion, and epileptiform attacks. She had felt well until eight weeks before her admission to the hospital, when she was seized with a severe sharp pain in the lower right side of the chest. A few minutes after this attack she had pain in the abdomen which did not radiate from the chest. Thereafter, the pain recurred two or three times daily following the ingestion of food. The dermatitis, which was acneiform and of five months' duration, occurred only on the face and trunk. Menstruation had been abnormal for three months.

The patient showed premature development. A papulopustular lesion was present on the face, the neck, the anterior part of the chest, and the back. The face presented comedones and moderate dermatographia. The facies was negroid and this characteristic was accentuated by hirsuties. The genitalia showed an abnormal growth of pubic hair with a distinctly masculine distribution. The heart was displaced upward by an enlarged liver and distended abdomen. A soft blowing murmur was heard at the base of the left lung. The blood pressure was 158 systolic and 85 diastolic. The liver was enlarged and its edges were irregular and presented palpable nodules. The spleen and kidneys were not palpable. The Wassermann and Kahn reactions were negative. A leucocytosis was present. The chemical blood tests were normal. Roentgenographic examinations of the gastro-intestinal tract were negative. The right kidney was enlarged.

In the hospital the liver became enlarged downward, especially to the left, and the epigastric fullness and pain became gradually more severe. Marked anorexia necessitated duodenal feeding. A week after the patient's admission, an intra-abdominal hemorrhage occurred and death resulted seven hours later.

Autopsy revealed a primary carcinoma of the left suprarenal gland with metastases to the pleuræ, the liver, and the peritoneal and mediastinal nodes, hæmoperitoneum, slight hypertrophy and dilatation of the left ventricle, chronic passive hyperæmia of the liver, lungs, kidneys, and intestines, fat infiltration of the liver, and precocious development and virilism.

Although the character and intensity of the symptoms vary in different cases, the syndrome of a tumor of the suprarenal cortex is characteristic of

the so-called "genitosuprarenal syndrome" of Galois. The sexual changes caused by hypertrophy of the suprarenal cortex are always toward masculinization of the adult type. Hypertension is an important observation. Pigmentation is commonly found. Roughness of the skin and an acneiform eruption, especially over the trunk and face, are also frequent. Mental precocity may appear, but mental dullness is more common and, particularly in females, is associated with loss of modesty. A variety of symptoms may result from metastatic growths in the kidneys, liver, brain, and lungs.

The most simple change in the suprarenal cortex with neoplastic tendencies is nodular or diffuse hyperplasia. The former is characterized by light yellow masses of varying sizes. The latter may produce a syndrome of feminine pseudohermaphroditism. Adenoma of the suprarenal cortex is uncommon. Carcinoma may occur at any age, but is most frequent in the forty-fourth year. The tumors are soft and yellowish and show a marked tendency toward hæmorrhage and necrosis. Characteristic are the early and widespread metastases, local extensions to the kidneys and perirenal tissue, and the infrequency of bony metastases.

With regard to the relation of tumors of the suprarenal cortex to renal hypernephromata, the Grawitz theory of the development of suprarenal tumors from rests of the suprarenal cortex is no longer generally accepted. The evidence indicates that renal hypernephroma bears no more than an accidental structural relationship to carcinoma of the suprarenal gland.

The prognosis depends upon the character of the growth, the degree of infiltration of adjacent structures, and the extent and accessibility of the metastases. Pielography aids in the recognition of suprarenal tumor as the upper calyces are compressed and the entire kidney is pushed downward. Successful removal of the tumor in three cases resulted in complete reversion of the sexual characteristics to normal.

LOUIS NEUWELT, M.D.

Ekehorn, G. On the Principles of Renal Function. *Acta med Scand*, 1931, Supp. LVIII.

Four years were taken by the author to prepare this volume of 717 pages. The experimental part of the work was done in Priestley's laboratory in the Department of Physiology of the University of Oxford. The volume is divided into 6 parts, each of which is preceded by an outline of its contents. The first 176 pages are devoted to a description of instruments, experimental methods, and chemical technique. This part is of value to anyone wishing to review the author's work or carry on studies of renal physiology.

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chiefly through transient diminution of the renal secretion and the reduction of the infection of the urine

The type of case in which irradiation of the kidney should be employed and particularly the manner in which the healing of the ureteral fistula takes place after the irradiation still remain to be determined. The author believes that, in the latter, the functional control of the irradiated kidney is a decisive factor. The question whether irradiation of the kidney can replace nephrectomy or implantation of the ureters into the bladder still remains unanswered. But, even if irradiation of the kidney merely reduces renal infection instead of excluding renal function, it will retain a place in the treatment of ureteral fistulae as a simple and harmless method. H. R. SCHWARTZ (G)

BLADDER, URETHRA, AND PENIS

Hepburn, T. N. Motility of the Trigone a Cause of Bladder Obstruction. *J. Urol.*, 1931, LVII, 591

The trigonal muscle is made up of a mesial and lateral group of muscle fibers from each side. The mesial fibers form the interureteral muscle while the lateral group (the muscle of Bell) form the sides of the trigone, run over the floor of the bladder through the internal sphincter, and become attached to the floor of the posterior urethra.

The muscle of Bell is concerned in the function of urination. By their action they seem to open the internal sphincter. The trigone is not always held firmly in place on the bladder floor. It may be detached either congenitally or by excessive action of Bell's muscle. Its detachment may be diagnosed cystoscopically. The picture is typical of bladder obstruction. The author believes the condition is largely congenital and suspects it whenever a child is unable to pass a normal stream of urine and the stream becomes smaller the greater the effort that is made to force it.

Any obstruction will cause compensatory hypertrophy of Bell's muscle. After removal of the obstruction the hypertrophy of the trigone will disappear. If detachment takes place, removal of the obstruction will not clear up the symptoms because the trigone itself then becomes the obstructing agent.

The treatment of the condition is surgical. The operation described by Young splitting of the trigone, gives excellent results. ELMFR HESS, M.D.

Caulk, J. R. Structure of the Urethra. *J. Urol.*, 1931, LVII, 407

This article presents a resume of the usual methods of diagnosing and treating strictures of the urethra. The importance of differentiating between spasm and fibrous stricture is emphasized.

Caulk urges persistence in gradual dilatation. He believes that surgical treatment should be reserved for cases with complications such as fistulae and pus sinuses which cannot be cured by less radical measures. He states that periodic supervision of strictures is essential. In a series of 1,320 strictures of

the urethra 45 urethrotomies were done. The mortality of operations for urethral stricture is low. The deaths usually occur in neglected cases and are due to sepsis or renal disease. MAURICE MELTZER, M.D.

GENITAL ORGANS

Greenwood, F. G. The Treatment of Granuloma Inguinale by Diathermic Fulguration. An Analysis of Twenty-Two Cases. *Brit. J. Radiol.*, 1931, IV, 488

The author reviews twenty-two cases of granuloma inguinale which were treated during the period from 1927 to 1929 in the Radiological Department of the Ipoh Hospital and in Kuala Lumpur in the Federated Malay States.

According to Castellani and Mendelson, the Leishman-Donovan bodies are not causative but nosoparasites comparable to X19 in typhus.

Granuloma inguinale must be differentiated from carcinoma, bubo, soft chancre, and syphilitic ulceration.

The author believes that fulguration is preferable to the various other types of treatment which have been attempted. The first patient upon whom it was tried was a Chinaman who had been treated by injections of antimony tartrate without results. The ulcer was fulgurated with the idea of stimulating a reaction. Marked improvement resulted. In another case a second treatment was necessary, but the patient was discharged after sixty-seven days with a soundly healed scar.

General anesthesia induced with chloroform was used in all cases except one. In the one exception spinal anesthesia was employed. The day before the operation the ulcer was cleaned with weak eusol dressings. Prior to treatment it was swabbed with tincture of iodine. Vigorous cleaning was avoided as it caused bleeding.

The fulguration was confined to the edges of the ulcer. This limited treatment was based, not on the pathology of the disease, which appears to be somewhat confused, but on the hope that the virulence was confined to the edges. Shock did not occur in any of the cases.

The edges of the ulcer were dealt with drastically. A thick spark was applied first to the unbroken skin where it rose to meet the growing edge, next, to the junction of the skin and ulcer, and finally, to the edge of the ulcerated tissue. A careful examination was made for interruptions in the line of desiccation, and any gap was retreated. Where isolated healed areas were found in the base of the ulcer, the edges of these areas were desiccated.

After fulguration a dressing of boric ointment was applied and left on for twenty-four hours. The following day, eusol dressings were used to clean the ulcer. A eusol dressing was then applied and left on all night. Thereafter, boric ointment dressings were applied at night and eusol dressings in the morning. By the seventh day the desiccated area was usually separated. No ingrowth of the

frequently on the right side than on the left side. Masses of lymph nodes invaded by the tumor are frequent. Metastasis by the lymphatics is usual. It follows the retroperitoneal lymphatics along the aorta and the vena cava. Thirty per cent of the author's patients had demonstrable metastases at the time of their admission to the hospital. In 21 per cent of the cases the metastases were recorded as generalized. In 18 per cent, the inguinal nodes were involved, in 19 per cent, the retroperitoneal glands, and in 8 per cent the supraclavicular lymph glands.

Ewing describes 3 varieties of testicular neoplasms, the adult teratoma, the teratoid or mixed growth, and the embryonal tumor. The adult teratoma, which is relatively uncommon, appears early, develops slowly, and usually does not become malignant. The mixed and embryonal tumors usually appear later, metastasize early, and exhibit a high degree of malignancy. The distinguishing features of these various types are not as clear-cut as one might wish.

In general, irrespective of the type of treatment, the prognosis of testicular neoplasms is poor, but occasionally brilliant results are obtained. Of a large series of patients whose cases were reviewed by Tanner, 80 per cent were dead at the end of four years, and of Tanner's own patients 70 per cent were dead at the end of that length of time. Four types of treatment have been employed: orchidectomy, orchidectomy followed by irradiation, orchidectomy followed by the use of Coley's serum, and radical operative treatment. Irradiation is approximately 16 per cent more effective than orchidectomy alone. Orchidectomy followed by the use of Coley's serum gives promise of being effective. Radical operation is based on the fact that

testicular neoplasms metastasize by way of the regional lymphatics as well as those extending up the cord and beyond.

The author's conclusions are summarized as follows:

- 1 Malignancy of the testis is uncommon. It occurs much more frequently in undescended than descended testes, and the danger of malignancy is just as great in the abdominal testis as in the inguinal testis.

- 2 The treatments now in use are unsatisfactory.

- 3 The incidence of four-year survival after orchidectomy is only 13.2 per cent. When suitable irradiation is added to orchidectomy, this percentage is materially increased in cases without obvious metastases. Approximately 7 per cent of patients with obvious metastases are saved, at least temporarily, by irradiation.

- 4 The value of Coley's serum in conjunction with other methods requires further study.

- 5 In operable cases the best results are obtained by block excision of the testicle, spermatic cord, and regional lymph nodes.

- 6 Judging from the literature, results surpassing those yet attained should attend the combination of radical surgery and irradiation.

- 7 At present, education of the public to seek competent medical advice early is the only practical solution of the problem of testicular malignancy.

- 8 In early doubtful cases, biopsy and frozen-section diagnosis should be resorted to with the patient prepared for immediate radical surgery.

- 9 The undescended testis should be placed in the scrotum where it can be observed. If this is impracticable, it should be excised, provided the other testicle is normally placed or can be placed in the normal site.

CLAUDE D. HOLMES, M.D.

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waddling gait and muscular weakness. The distortion of the pelvis may affect labor and necessitate caesarean section. Tetany is common. In all cases the serum calcium is diminished. Treatment with cod liver oil and calcium salts quickly overcomes tetany and pain, and when supplemented by sunlight, good food, and the use of irradiated ergosterol is usually followed by slow recovery.

RUDOLPH S. REICH, M.D.

Cosin, C. F. Hyperparathyroidism. A Case of Osteitis Fibrosa Cystica with Cystic Adenoma of the Parathyroid. *Guy's Hosp Rep*, Lond, 1931, LXXI, 297.

In 1904 Askanaazy reported a case of generalized osteitis fibrosa in which autopsy disclosed a parathyroid tumor, but the significance of this discovery was not realized until more than twenty years later. In 1907, Erdheim, and in 1923, Dawson and Struthers, described similar findings, but concluded that the parathyroid hyperplasia was secondary to the bone disease. In 1927, Mandl treated a case of osteitis fibrosa by administering parathyroid. As this treatment was unsuccessful, he transplanted parathyroids into the abdominal wall, but after this procedure the condition became worse. He then explored the neck and removed a parathyroid adenoma. Following this operation the symptoms subsided and the calcium excretion fell to normal. In the same year, Aub demonstrated hypercalcemia, a low phosphorus content in the blood, and excessive excretion of phosphorus and calcium in the urine in cases of multiple osteitis fibrosa.

The author reports a case of hyperparathyroidism in a boy seventeen years of age. Deformity of the right knee was first noted in 1927. The knee was assuming a valgus position. In January, 1929, manipulation was done under anesthesia. The leg was found incapable of weight bearing and after four months in bed the patient was discharged on crutches. In January, 1930, he fell and fractured the left femur. By the end of thirteen weeks there was no union.

When the patient was examined in Guy's Hospital in August, 1930, the urine was alkaline and had a specific gravity of 1.011. It showed a trace of albumin, but contained no Bence Jones proteose. In a cylindrical specimen glass it threw down a heavy white deposit about 2 in deep which consisted of calcium and amorphous phosphates with a few red cells, leucocytes, and granular casts. The blood urea was 68 mgm per 100 c cm. Voluntary movement of the hips and knees was painful and limited. The bones were tender to pressure. All muscles were extremely wasted and atonic. The calvarium was slightly enlarged and the teeth were carious. Roentgenograms showed cysts in the femora, clavicles, radii, ribs, pelvis, spine, and many of the metacarpals and the phalanges of the fingers. Stones were found in both renal pelvis. Deep on the right side of the neck, palpation revealed an oval tumor which moved with the thyroid. The blood

pressure was 138 mm systolic and 110 mm diastolic. The pulse rate was 120.

For ten days the patient was placed on a weighed diet yielding 100 mgm of calcium and 223 mgm of phosphorus a day. During a period of three days the daily excretion of calcium in the urine averaged 0.76 gm whereas the daily calcium intake was only 0.30 gm. The normal excretion of calcium under the same conditions would be 0.15 gm per day.

While the patient remained under observation in the ward he maintained a rapid pulse, ate poorly, and suffered from frequent headaches and vomiting. The latter were subsequently proved to be due to hyperparathyroidism.

At operation, a parathyroid tumor measuring 2.7 by 2.2 by 2 cm was removed. Small cysts were found in the tumor mass. The operation was followed by tetany, but this was controlled by the administration of calcium by mouth. After the operation the size of the bone cysts decreased and the density of the bones increased. The serum calcium, which before operation ranged from 15.33 to 16.5 mgm per 100 c cm, ranged between 7.8 and 11.2 mgm per 100 c cm. The heavy deposit in the urine disappeared immediately, and the calcium content of the urine fell to about one-tenth its preoperative value. With the aid of massage, the muscles regained their tone and contour. The vomiting and the headaches ceased. Five and a half months after the operation the patient was in good condition and walking very well.

C. G. SHEARON, M.D.

Walton, A. J. The Surgical Treatment of Parathyroid Tumors. *Brit J Surg*, 1931, XX, 285.

Walton reports four cases of parathyroid tumor associated with generalized osteitis fibrosa which he treated surgically. The diagnosis of parathyroid tumor was based on Hunter's study of the bone changes and calcium and phosphorus metabolism. There were no physical signs of a neoplasm in the neck.

The parathyroid glands occupy a wide strip in the posterior border of the thyroid gland. They vary in number and position, but as a rule a superior and an inferior gland are found on each side. Occasionally, one or more parathyroids are situated in the substance of the thyroid gland.

In the cases reviewed the operation was performed under light ether anesthesia. Wide exposure was found necessary. The thyroid fascia was incised and the lateral lobes of the gland were freed and rolled outward. In the first case the tumor was found in the usual site of the left inferior parathyroid gland, and in the second case between the sternum and the clavicle. In the third case a small adenoma in the left lobe of the thyroid suggested a parathyroid tumor, but on further exploration a large parathyroid tumor was found in the upper part of the thorax to the left of the trachea. In the fourth case a small adenoma in the right lobe of the thyroid was mistaken for a parathyroid tumor, but at a second exploration a small parathyroid tumor was removed.

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Of 24 cases of malignancy of the lungs, secondary involvement of bones was found in 16 per cent. According to the literature, the incidence of bone metastases in malignancy of the lungs is 38 per cent. The roentgen appearance and clinical course of the metastases are similar to those of metastases in bone from other sources.

Of 169 cases of melanoma developing in a pigmented mole, metastatic melanoma in bone occurred in 1.09 per cent. The author cites a case in which a seven-year cure followed amputation of the arm.

Bone lesions from primary malignancy in the ear, heel, neck, and nasopharyngeal tract are also recorded.

In addition to the cases in which the primary source of the metastases was known, the author reviews 31 cases in which no primary lesion could be found.

Copeland discusses the theories of von Recklinghausen and others regarding the manner in which the metastases occur. He believes that they are produced by both embolic and lymphatic spread of the disease, the manner depending upon the conditions of the particular case.

WILLIAM ARTHUR CLARK, M.D.

Burman, M. S. Arthroscopy or the Direct Visualization of Joints. An Experimental Cadaver Study. *J. Bone & Joint Surg.*, 1931, XIII, 669.

Burman describes the use of an arthroscope which he had constructed for the examination of the interior of the larger joints after irrigation and distention of the joint with fluid. Examinations with this instrument were made of more than ninety joints of cadavers, including knees, hips, shoulders, wrists, ankles, and elbows. The technique for each joint is described in detail, and the findings, which were checked by opening the joints, are shown by colored drawings. The selective staining action of several dyes was found of value to emphasize changes in the joint structures.

In conclusion Burman says that arthroscopy may be indicated in place of exploratory arthrotomy, and suggests that the arthroscope might be fitted with an operative attachment for the removal of specimens.

WALTER P. BLOUNT, M.D.

Kling, D. H. The Nature and Origin of Synovial Fluid. *Arch. Surg.*, 1931, LXIII, 543.

This study was undertaken because the theory that synovial membrane is a modified connective tissue makes the origin of the synovial fluid problematical.

The Rivalta test to differentiate transudates and exudates is made by allowing a drop of the fluid to fall into 3 per cent acetic acid. If the fluid is a transudate it leaves only a faint trace, whereas if it is an exudate it produces a turbidity like cigarette smoke, which is regarded as a positive reaction. Normal and pathological synovial fluids behave differently with this test. They form a membrane or sack which hangs from the surface of the acid or falls to the

bottom, depending upon their character and the concentration of the acid. Synovial fluid differs from sera, transudates, and exudates also in its reaction when it is dropped into absolute alcohol or a concentrated solution of corrosive mercuric chloride. Sack formation was found to occur also with saliva and egg white, which are products of cell secretion and viscous fluids containing a mucinous substance.

Studies of the viscosity of synovial fluid revealed wide differences even in the same joint diseases, but in general the viscosity was higher and the range of variation greater than that of plasma and exudates.

The specific gravity of synovial fluids is in the range of the specific gravities of body fluids. The concentration of proteins, which determines the specific gravity, is therefore not the underlying cause of the variation in viscosity and the precipitation.

It was proved that none of the colloids and diffusible constituents of plasma explains the differences in the viscosity or the sack formation, and that the hydrogen-ion concentration and carbon-dioxide percentage are also without marked influence on these phenomena.

The mucin or mucinous substance is a physiological product of the synovial membrane produced by the stimulus of motion and adapted for protection and lubrication of the articular surfaces. The properties and function of the fluid indicate that the synovial membrane is a specialized tissue and not modified connective tissue. That the cells of this membrane elaborate the fluid can be demonstrated by a special staining technique which shows them to contain mucin granules.

Mechanical and inflammatory joint changes alter the amount and composition of the synovial fluid, but 94 per cent of the pathological effusions studied showed characteristics of synovial fluid indicating that they were derived from cell secretion and circulatory extravasation. Only 4 per cent were considered pure exudates or transudates. The author advances the theory that the synovial membrane has a two fold structure which consists of connective tissue for binding purposes and an actively secreting lining.

The findings of this study explain the different reactions of different joints to the same irritation or inflammation. In the knee, in which the secretory element is best developed, gonorrheal arthritis causes an effusion, whereas in the ankle and wrist, where this element is less well developed, gonorrheal arthritis results in an infiltration and an ankylosing process. That the synovial fluid has a protective action is evident from the better prognosis in the forms of arthritis with an effusion as compared with the atrophic forms.

The author's studies show also that trauma causes an almost immediate reaction of the synovial membrane which may continue and ultimately result in the picture of chronic synovitis. In osteochondritis dissecans the synovial fluid is normal until the sepa-

Of 24 cases of malignancy of the lungs, secondary involvement of bones was found in 16 per cent. According to the literature, the incidence of bone metastases in malignancy of the lungs is 38 per cent. The roentgen appearance and clinical course of the metastases are similar to those of metastases in bone from other sources.

Of 169 cases of melanoma developing in a pigmented mole, metastatic melanoma in bone occurred in 1.09 per cent. The author cites a case in which a seven year cure followed amputation of the arm.

Bone lesions from primary malignancy in the ear, heel, neck, and nasopharyngeal tract are also recorded.

In addition to the cases in which the primary source of the metastases was known, the author reviews 31 cases in which no primary lesion could be found.

Copeland discusses the theories of von Recklinghausen and others regarding the manner in which the metastases occur. He believes that they are produced by both embolic and lymphatic spread of the disease, the manner depending upon the conditions of the particular case.

WILLIAM ARTHUR CLARK, M.D.

Burman, M. S. Arthroscopy or the Direct Visualization of Joints. An Experimental Cadaver Study. *J. Bone & Joint Surg.*, 1931, XIII, 669.

Burman describes the use of an arthroscope which he had constructed for the examination of the interior of the larger joints after irrigation and distention of the joint with fluid. Examinations with this instrument were made of more than ninety joints of cadavers, including knees, hips, shoulders, wrists, ankles, and elbows. The technique for each joint is described in detail, and the findings, which were checked by opening the joints, are shown by colored drawings. The selective staining action of several dyes was found of value to emphasize changes in the joint structures.

In conclusion Burman says that arthroscopy may be indicated in place of exploratory arthrotomy, and suggests that the arthroscope might be fitted with an operative attachment for the removal of specimens.

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leucocytes with 60 per cent polymorphonuclear leucocytes in chronic non specific arthritis is likely to be associated with a positive bacterial infection, and that a cell count under 5,000 leucocytes with fewer than 50 per cent polymorphonuclears is likely to be associated with negative bacteriological findings

ROBERT V. FUNSTON, M.D.

Inberg, K. R. Experimental Contributions on the Question of the Development of Pseudarthroses (Experimentelle Beiträge zur Frage der Entstehung von Pseudarthrosen) *Acta Soc. med. Fennicae Duodecim*, 1931, VII, No. 9

The author's findings and conclusions from experiments on cats, dogs, and rabbits are summarized as follows:

1. Of the callus forming tissues, the periosteum is much more important than the marrow. In experiments in which the periosteum was removed a false joint often developed even when the site of operation was isolated from the surrounding tissues. On the other hand, after destruction of only the marrow, consolidation was found. It was discovered also that the marrow is not absolutely necessary for preservation of the cortical layers.

2. The biological value of the periosteum and periosteal callus is apparently greater than that of the marrow as destruction of the periosteum after fracture generally exerted a greater influence on the inorganic phosphorus content of the blood serum than removal of the marrow.

3. That the marrow is also of importance was demonstrated by both the phosphorus determinations and the microscopic findings.

4. It is evident that operative trauma is not of decisive importance in the development of pseudarthroses after destruction of the periosteum since in experiments in which isolation was done a very marked consolidation apparently originating in the marrow sometimes resulted. That injury to the marrow after the operation was not the exclusive cause of the failure of ossification was evident from the fact that callus formation sometimes failed to occur when movement was entirely prevented. The theory that compression of the blood vessels of the marrow may be responsible for the failure of regeneration of the marrow because the marrow forms callus only within the medullary canal must be incorrect because the marrow is still widely exposed after at least three months and because, as many experiments have shown, the marrow callus together with the blood vessels can grow out of the medullary canal and form bone. Apparently in certain cases the connective tissue surrounding the bone may produce a pseudarthrosis after destruction of the periosteum by growing between the bone ends and hindering regeneration, but the fact that a similar connective tissue was sometimes found at the site of operation in the absence of consolidation, although the operative field was isolated from its surroundings indicates that the surrounding connective tissue is not always the cause of pseudarthroses.

5. In cases of large total defects (4 mm, experiments on cats) a false joint always developed. In the formation of the connective tissue found in the defect the marrow took part to a greater or less extent. Newly formed bone could be found only in the vicinity of the bone ends. The part played by the surrounding connective tissue in the development of pseudarthroses in defects is therefore very difficult to determine definitely as it is usually impossible satisfactorily to distinguish the connective tissue formed by the periosteum from that formed by the marrow or surrounding tissues.

6. These experiments support Lever's theory only insofar as the latter emphasizes the great importance of the periosteum. The reason why ossification occurs in the connective tissue produced by the periosteum and the marrow in some cases and fails to occur in others has not yet been definitely determined. At any rate, the periosteal callus seems to have other important functions besides the provision of a blood supply to the fracture.

7. The exclusion of the periosteum and marrow is difficult because of their great regenerative power. However, microscopic studies showed that during the early months when the callus formation is usually most lively they play only an insignificant part, if any.

8. For the "sympathetic bone involvement" (Martin) a mechanical explanation seems more suitable as the changes in an earlier stage are the same as those produced by active function in the undisturbed parallel bones. Moreover, when the experiment was continued for a sufficiently long time the cleft disappeared.

9. In cases in which the periosteum and the marrow were intact, lively motion did not produce a false joint, but it retarded consolidation and at the same time caused the formation of a large amount of callus.

LOUIS NEUWELT, M.D.

Key, J. A. Experimental Arthritis. The Changes in Joints Produced by Creating Defects in the Articular Cartilage. *J. Bone & Joint Surg.*, 1931, VII, 725

The author reports the results of experimental observations on the knee joints of rabbits. The joint was opened under ether anesthesia and, with precautions for asepsis, a small section of cartilage and underlying bone was removed from the articular surface of the femur. Forty such operations were done on twenty rabbits and the results noted from eight days to seven months after the operation.

The postoperative findings were quite varied. Many of the joints showed arthritis involving the entire extent of the articular surfaces, whereas in others the cartilage defect had filled in so that the operative trauma was scarcely distinguishable. The lower end of the femur was often broadened to twice the normal width by new bone production.

On microscopic examination, the synovial membrane of those joints in which arthritis occurred was found thickened and infiltrated with round cells. In

From the orthopedic standpoint, only local and mechanical treatment has been recommended. Tenotomy of the tendon of Achilles is sometimes indicated, but it frequently results in permanent disability, not because of failure of the method, but because the patient, once being forced to recumbency, never regains strength enough to walk. Permanent disability of this type may occur also after operations for other lesions, as in a case cited by the author in which the patient never walked again after an operation for appendicitis. Various glandular products, particularly adrenalin, have been used in constitutional treatment. Kure and Oknaka obtained promising results with adrenalin and pilocarpin. In twelve cases improvement was apparent after from thirty to sixty injections. As a rule an increase in muscle strength was noted at the end of two or three hours after the injection. Kure and Oknaka do not claim that the treatment gives a permanent cure, but they believe it holds the disease in check and have found that in some cases it is followed by sufficient improvement to enable the patient to walk farther without support.

Of the twenty-eight patients whose cases are reviewed by the author, twenty-two are living, but only three are able to walk. Of sixteen treated with adrenalin and pilocarpin who were followed, all showed improvement. In eight, the improvement was slight, in four, moderate, and in four, very pronounced. In one child a practically complete functional cure was obtained. In almost all of the cases the condition was in the early stages.

WILLIAM ARTHUR CLARK, M.D.

Mau Osteopathia Patellæ (Osteopathia patellæ)
Verhandl. d. deutsch. orthop. Gesellsch., 1931, p. 334

The author reports the case of a boy nine years of age who complained of continuous pain in the right knee. A year previous to the time the patient was seen by Mau, a diagnosis of beginning tuberculosis was made and a plaster-of-Paris cast applied. The symptoms then ceased for a time. Mau found a thickening of the tissues in the region of the patella. The circumference of the joint was increased by from 2 to 2.5 cm. There was some limitation of extension, but no effusion. The lateral roentgenogram showed complete disorganization of the bony structure of the patella. The upper pole of the patella appeared widened and showed marked changes. Its outline was irregular. In the anterior layer of cartilage were two areas of calcification, one long and one round. The lower pole also showed changes.

As the tuberculin test was negative, the condition was assumed to be an osteochondritic process. After a short period of fixation in an Unna paste boot dressing the pain ceased.

A roentgenogram taken a year later showed a normal structure only in the lower portion of the patella. Here there were two pea-sized areas of calcification. In the upper portion the structure was completely obliterated. The shadow of the patella showed lighter and darker zones.

Two roentgenograms taken in the course of the following year disclosed the gradual return of a regular trabecular structure in the patella, the calcification shadows in the upper pole had united with the nucleus. A roentgenogram taken two years later showed an enlarged but uniform bone shadow with a still somewhat irregular structure in the upper pole. At the end of another two years the roentgenogram showed a regular structure at the lower pole, but at the upper pole and in the center the structure was still indistinct. Two years later the trabecular structure in the latter areas was also regular although somewhat coarse-meshed. The patella was enlarged in both long and short diameters by about 1 cm. The patient, then seventeen years of age, had no further discomfort and was able to engage in sports.

In this case, destruction and regeneration of the bony structure of the patella occurred. According to the roentgen findings, the pathologic anatomical processes resembled those of Perthes' disease and those of Koehler's disease of the scaphoid bone. The author believes that the condition was an aseptic necrosis of the patella due to nutritional disturbances. This theory is supported by the findings of experiments carried out on animals by Wollenberg and Axhausen. The cartilaginous nucleus of the patella is supplied by some of the arteries from the articular rete of the knee. These vessels run over the anterior surface of the patella from below and from the side and then enter vertically into the canaliculi of the medullary cartilage of the cartilaginous nucleus where they branch out. With the development of the spongiosa nucleus, the canaliculi of the medullary cartilage undergo regression. As the vessels must penetrate a thick layer of cartilage before the bony nucleus reaches the surface of the cartilaginous patella, the author believes that the injury of the patellar vessels occurs at the points where the vessels are subjected to powerful pressure and pulling effects from the attachments of the quadriceps tendon.

In the discussion of this report, KUH cited a case of coxa vara associated with osteitis fibrosa which resembled Mau's case in many respects. In this case also there was an aseptic necrosis, with thickening and enlargement of the bone, effacement of its contours, and changes in the osseous structure indicating a tendency toward healing. In both cases the condition was due to overburdening of a weakened bone. Supportive apparatus seemed effective in securing a cure. In Mau's case, which was under observation for eight years, a cure was demonstrated, but in Kuh's case the end result is unknown.

ENGEL (Z)

Sundt, H. The Diagnosis and Frequency of Tuberculous Disease of the Knee. *J. Bone & Joint Surg., 1931, xiii, 740*

Of 310 patients with affections of the knee joint who were admitted to the Coast Hospital at Stavern, Norway, during the past nineteen years, the lesion

Hauser, E Correction of Deformity as a Routine Procedure Before Stabilization Operations on the Lower Extremity *Surg, Gynec & Obst*, 1931, lxxi, 369

In the residual stage of anterior poliomyelitis the aim of treatment must be maximal function with minimal deformity. When a joint is fixed, the so called position of choice is one which gives the greatest usefulness and the best appearance. This position has been fairly well established for most joints.

When it is necessary to gain stability in the lower extremity and an operation is indicated, the joint to be stabilized must first be put in the position of choice. As a rule the correction is done at the time of the arthrodesis. This can be accomplished only with sacrifice of tissue. Very frequently a muscular disbalance underlies the deformity and this is not corrected by the operation. The tendency of the deformity to recur persists, and not infrequently is manifested after the operation.

The author reports three cases in which corrective operations were performed before arthrodesis.

In the first case osteotomy of the femur was done for the correction of flexion deformity several

months before a triple arthrodesis of the foot. In the interval between the operations some weight bearing was allowed.

In the second case a cavus deformity was corrected by division of the plantar fascia and tenotomy of the flexor tendons before triple arthrodesis was performed.

In the third case an osteotomy of the knee with correction of the flexion and rotation deformity was done three months before stabilization of the foot. In the stabilization, arthrodesis of the calcaneocuboid, the subastragaloid, and the astragaloscaphoid joints was done.

These cases demonstrate that excellent results may be obtained even in old neglected residual anterior poliomyelitis. The preliminary correction of the deformities of the foot and knee favored an increase in function of the limbs. The arthrodesis at the midtarsal area resulted in further stability and helped to maintain the correction. With the removal of the flexion deformity at the knee, weight bearing was made possible through the shaft of the femur and tibia by virtue of a moderate genu recurvatum.

ROBERT V. FUNSTON, M.D.

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w p o s t i n n l o g p c n t h f t h
c a s e f k n w n t b u l l e s s t h b l o o d
r c t n p o t 7 4 p t

The m t d r t i c d t t h s a m t m e t h m t
c u a t e t s t s p l t r v t h t m d m c r o
s c p e m t I t h l t l y d m g
w h i c h t m e t h t h p e f m e d m x p l t r y
p e r a t s t h b e f o e t h j r e i g f o
t u b e r c u l o l e s n s f t h k e e n d o b i f l e s e s
s h o w e d g r e t n e s e T h f d g m
l i k l y t o b e n g t e h i l l n t h d l t s
O f 61 p a t n t s 5 o f h m w e r e h a d r t b e c u
l o s s w a s c a l e d b y t h e p l a t r y p e t o
31 o f t h e d u l t s b u t i n n e o f t h c h i l d n I t h

e n t i e n n t e n y e a p e r i o d t h e r t w o o f t b e u l
t n o t u b e r c u l s l e s o s o f t h k n e w t s
h a s d u r i n g t h l a s t f o u y e s o f t h s p e r i o d
i t a s i t

O f t h e c a s e s o f n n t b e c u l u s g o t u s r a c e d
b y t h a u t h o r t h c a s e s o f t h c n d t c o l d n t
b d t r m e d i n 52 4 p e r c e n t I n J h n s o n c e s
t h e c o r s p a n d n g p e c e t g w a 34 4 1 S o r e l s
a s e s 59 7 n d B u c k h a d t s c a s e s 31 5 T h e
a u t h o r s y t h a t t h e f i g u e s h o l d b o r n e
m a d w h e e h e r o f m a k b l e c u e s o f t h e r
c l o i s o f t h e k W L R M A t u t r C l a M D

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

I l e d l a n d M M o d n T e d c l e s i n t h T a t
m t f T b e c u l i s f B o d J i n t
(M d m R u h t d F g d K o c h a
G l k t b l l) \ h A h 93 j j

S e e t h e b e g n g f t h s c e t r y t h e t i c y
i n t h t r e a t m e n t o f t b e c u l 4 o f b o n a n d j t s
h s b n b e m p m e n d m o n s r v a t e a n d
t h n m b r o f m a j r p e r a t n s f r t h c o d t
h s b e n c t a n t l y d e c i n g F o t h e l l e v t
f t h l c a l m p t m t h p e d c a m m b l a z
n d r h i f f m e i g t b e a n g p p a r t o b t h
m t m p o t a t m e a s I f w e e r g a d l e s o f
t a l c o t a t b e u l c n s d e r d n t a l c l z d
n d c c m n b d d t i b t g l d i s e
d a a t t m p t s m a d e t c m b t a t b y s u m n o b
l i g a l m e a r s M a t e n f t h m n a l
b l a c o f t h g a m b y m e n f s u t a b l d e t
n d c a l c m t h e a p y s b e o m n g m r e g r a l l y
e c g n d a o f i m p o r t a c T h m e a s e s t m
p l o y d n l u d e t l e s f t h S a b r u c h I l r
m a s d o r f G s o d e t t h t r a e o s n j t o f
l e m s t m u l t n f t h s s m l t n f c a l c u m
b t h i m p l a n t a t f b n e d t m l a t o n f
m t b l m t h g h t h e n d c e y t e m b t r a n
p l a t t f p t h a d l d s O p e t f i t
f t h r t b l l m n f o t h h l n g f s p j
l t s n d p t c l d p e r t i c u l a f t n b
t h m t h d f L a l l d W e d n m o d i f i s
f l s i t h e t e m t f t b e r l s s f j t s

E t s j t r e s e t s d o e l i s e r e
f r m f j n t b e c u l e p e c i l l y e s c o m
p l c a d b y f s t l f m t o n a d o i r y s e c
t T h s o c a l l d n m i r s e c t n s o n t h u
a t c a l l m m d e d b y h n h l d b e m e
t d b t t h e l n g t h f t m t h b e s e d i a t l l
t o o h t t t p n n e g d g e s n d
l t

A m m t h r a p y H o l z h s g g t f t a t m e n t
t h t r a m l r j t s f p e c e t l o d f r m
g l t d b l l z d s t u m l a t
t h t n t r f f n j t f o l o f c a y o
p h l l o t a t c u l n j t n t n l s e l o l
a s g g e s t d b y R s e

M t m p o t a t i t h e t e a t m n t f t b e c u l o s
f b o n a d j t a e s o c i a l m e a r d i e w r k
f l l e a t t o G A u r o (2)

C, vasoconstrictor spasm is the cause of the circulatory deficiency. If there is no increase in the temperature following the nerve block, vasoconstriction plays no role in the vascular disease.

The technique of the test is described in detail

SAMUEL KAHN, M D

BLOOD, TRANSFUSION

Stellhorn, C E, and Amolsch, A L. Granulocytopenia, Agranulocytic Angina, and Related Blood Dyscrasias. *J Michigan State M Soc*, 1931, **XX**, 743

The authors review the facts that are known regarding granulocytopenia and thirty one cases collected in Detroit, Michigan. They suggest the following classification of granulocytopenic conditions

- 1 Typical primary granulocytopenia
- 2 Atypical primary granulocytopenia
- 3 Secondary and symptomatic granulocytopenia
 - A Aplastic myeloid disorders (1) acute aplastic anemia, (2) chronic aplastic anemia, (3) panmyelophthisis, and (4) purpura hemorrhagica with leucopenia
 - B Leukemias
 - C Miscellaneous

The cases reviewed presented nearly all of the symptoms originally described by Schultz. In one case the condition followed the prolonged adminis-

tration of mono iodo cinchophen. The authors believe that death is due to secondary infection which the body is unable to resist because of the decrease in phagocytes.

Good nursing care and supportive and symptomatic treatment are all that has been found of value

MAURICE L DALE, M D

Irzigler, F J. Uræmia Following Blood Transfusion (Uraemia nach Bluttransfusion). *Zentralbl f Chir*, 1931, p 1682

The case reported was that of a man thirty-seven years of age who was given a blood transfusion because of severe hemorrhage from rupture of the spleen. The preliminary agglutination and biological tests were negative. As a late result of the transfusion there developed a uræmia caused principally by mechanical blockage of the renal canaliculi. The simultaneously appearing changes in the canalicular epithelial cells were of a degenerative nature and possibly due to toxic protein decomposition products released by the hæmolysis.

In general this case confirms the findings made in experiments on animals which indicated that agglutination and hæmolysis are not such closely related reactions of different types of blood as is assumed in the use of the so-called agglutination tests. In experiments on animals each of these phenomena can be induced independently of the other. However, blood transfusion should be given only when it is definitely indicated and after careful blood group determinations.

B VALENTIN (Z)

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

St pf d J S B Innervation f Blood V l f
the Limb L f 93 c 779

Bl od essels r ce e a pr xmal supply of nerve fibers from the sympathet c h i th t c ompa s s th a teries and a perpher l s ppl th t reaches the arter s at intervals f m the pe pheral nerves. Med flated fib rs ar f und nly in th latter source. Th y re of tw type Some ar vasodilato fibers going to the blo d c sel nd oth s e se s ry fibers th t l al ng the blood vessels b f re they join the n rve trunks The e s definite idence that cont act of capillaries is cont lled by sym pathet c ner es N p o f has b en ad anced t show th t blood ves el ha se sory o fferet ympathet c nerv fibers in f ct so l r a s kn wn at present th y ar de d f sensat n

Sev al cases p e ouly r po ted by the a thor d m ast at th t p olo ged irritati n of a sp l nerve conta ng va oc nstrict fib rs o smilar i ritat n f th symp theti co d will cau e p o longed va constr t n degenerat ion of the ss l wall a d fin ly art ial occl

The author c ncl des that rritat n f nerve sh ld be eli d early t p e ent ascul changes and that n bs ure v cul r d se se h sh ld be mad f urtati n of va oco st ct fibers

M U E L D E M D

R id M R A Repo t f v cul Le l n Th t
f fa e Be n T ght d Emph f ed by Pro-
f sor M t Am J S f 93 7

Th utho d cu ess e lpr ples f s la su g ry that ha b en empha ized by M ts

If c lls tt t fust t the ad ant ge f th remov ble metall b d f pr m l l g to f nears ble bef l l te l e l t h d el ped In n llust t a e port d hem p l g a occu ed h the mm a t d st ry w s compl tly c mp ssel mo l f th b nd w f llow d by prompt e ry and gr d l e m p s son f th a tery f lly lted c f th ar crism w th t ce b al d t b n

The flect f t s n r m n the he t is shown by a ther e e pot f b p t nt had be bedridn n f e six mo th a t pped f q e tly be e of c tes nd h dg rala s Immed at ly after q druple l g t f the t no v us mmuns at n p mpt reco y f l w d so th t lter t o m ths he w s ble t ply g ll d pursu h s ocation

In all c ses f terno n s mm cat s R d coll teral c cul t o d l ps al ng w th the de elopme t f the a crism ber e p e l m ry eff t to devel p collaterals i necessary befo

oper t n Va cular d g e t on m les resto
t on of c nt nuty of l t l v l e
C rso d ane r m s nd f r i o s n m s
a e essent lly the sam a d h e a s m l a tology
They m y be onge t l acq red thr gh tra m
The auth r report two tra m t i c rso d a e s m s
In ca e of c so d n r m e a t l u t n
of the e t emty a d e g th cc r wh e s u n
es of v no s ang m a the e l e t e u d e r
a ternalizat o of the e mty ith r ult g p
p ss n f g o th and l ck of de l p me t
M U E L E L r s t r e M D

Sc tt W J M d M t n J J Th Diff re tl
t l n f P lph ral A t l l Spa m d Ocel
s l n in Amb l t r y Patl t J l m M t
93 1 2

C eful l ncale am t u y l d m t f th in format on ed d i th studv of a cul d s es of the ext emit s The ppe ra ce f th lmb the h r nt l th el ated nd the depe dent pos t on th length of t m r q r d f f the r tu of c l r ft t mpo ary l cal compe n a d ster elevat on the c mpa at e w r mth f the p a t nd the f d ngs of p lpat n f r arter l pulsati n r suffc t t f m tr t th co d t l of the cul t a d t d t o ghly the d g r e f y o b struct ion th t m y b p s t If e r s the m th ds f l to h w th cau e f c r lat y d e f e cy nd wheth r t s d g e d nt on m ch n eal pl g g f th ss ls a cul r spa m l the study f p pher l v cul r d ases a t st th t d f f ent at s occl d p m ha become es tial

Sp l x the i s kn t c e a n i rease th su f temp at e f th f t C l xsth a h be f d t g e th mlete blt at f aso tr t u f al f a p ph l e t k so t d w th a hype the m th a r th t

Th m t mm la l the e t m t i v l e cheffy th f et Th poster r t b l e r s th t u k f h h ly a ess bl j t b l w th t n l m l l f r m t th t n r v t f th sol f th foot nd th pla t r f f th t s f t d l l o p d ng the d t des d m g th r l t f n r v bl k

B y blo k g th po t t b l r s w th pr ca th th det rm f th l l m t of the r m l sod lat t l l t b j s d g e C t room t mpe t e f f dege C Wh c l c l t r y l f k w t l th r v bl k f a f th t mpe t the a s s th t e s th e f lly t k f f th r f c t mper tu h g p t eds 30 s d gr es

One of the most important findings was the fact that while postoperative pulmonary embolism, is especially common in women, during the period of the War women were very much less frequently affected by the condition. This observation very definitely demonstrates the important part played by the state of nutrition, which during the War was quite the opposite of a status adiposus. Another important finding was the presence of cardiac changes in more than one-half of the cases of fatal pulmonary embolism occurring after operation. Involvement of the respiratory organs, liver, and biliary tract was also found in about 50 per cent of the cases, whereas splenic changes were noted in only about 33 $\frac{1}{3}$ per cent. The author concludes that the surgical procedure superimposed upon the primary disease and the associated anatomical changes in the internal organs favored a distant thrombosis. The latter usually developed in the lower extremities and occurred more often on the right side than upon the left.

Fatal pulmonary embolism in medical diseases did not show the decrease in incidence noted in surgical cases in 1928, but the recent increase in the condition has attracted the attention of internists and the diagnosis is now being made more frequently. Fatal embolism associated with medical disease exhibits a definite relationship to unfavorable weather conditions, being most frequent in April, October, and November.

It is noteworthy that among the associated diseases in the cases reviewed organic affections of the central nervous system were about as frequent as affections involving the heart and pericardium. Organic changes were found in the respiratory tract in 66 $\frac{2}{3}$ per cent, in the liver and biliary passages in more than 50 per cent, and in the heart and blood

vessels in 50 per cent. Fatal embolism following a medical disease appears to be the result of the interaction of this condition with associated diseases involving several organs.

The author denies a relationship between fatal surgical embolism and the influenza epidemic of 1918, an increased incidence of wound infections, the use of intravenous medication, or changes in surgical technique and the technique of local anaesthesia. He believes, however, that the more frequent use of catgut in recent times may be a factor in the occurrence of embolism after operation. Of primary importance is obesity. Obesity has increased during the postwar period and remains the most frequent predisposing cause of pulmonary embolism.

MAN BUDDÉ (Z)

ANTISEPTIC SURGERY, TREATMENT OF WOUNDS AND INFECTIONS

Simpson, W. M. *Tularæmia*. *Illinois M. J.*, 1931, 17, 207.

Simpson discusses the advances made in the study of tularæmia in the last five years. The disease seems to be of world-wide distribution. Many new sources of human infection other than the wild rabbit have been discovered. The author has seen eighty-eight cases, eighty-four of which were observed in or near Dayton, Ohio. Following a description of the gross and microscopic appearance of the lesions in man and animals and the experimental production of the ulceroglandular, oculoglandular, and glandular forms of the disease in guinea pigs, he reports eight clinical cases. He states that the use of immune human serum seems to arrest the progress of the condition.

ELIZABETH CRANSTON

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

Cl hn A Th I crease f Th ombol nd Em
boli m During th Years f om 1919 t 1929
(Z hm d Thrombose d Embol)
J h 9 9 929) B l s kl Ch 93 d i
369

I the Gessen Clinic the number of fat l ca es f
p lmonary mbol sm howed a con de able incase
during the yea s f m 1919 t 9 9 The e e s
ca es f post perati e thromb and embolism
including 6 f sept embolism n whch th sept c
e nd tion ws lf wo ld probably hav e ulted
fat llj 35 cases f pulmon ry embolism 4 cases f
seve e th mbos n the cours of fat l illn s
nd 4 cas s n wh h d th resulted afte re o ery
f m thr mbos w th slight p lmona y embolism
Sm ll thr mbos s wh ch d d not g lly p along the
patent s tay in th hospit l r se ously aff ct the
ge ral ond ti n a e n t cons ded

The m st marked rise in the fatal c ses of em
bol m b gan n 1925 During th y ear the mo
t l ty ncr sed 10 p r c t lf to th 51 c lly
cogn z d cases f l t l th mbo d embolism
the ca es n whch th c ndition s f r t ecogn d
at autopsy a e dd d the numbe f c s s n
e eased t 84 Of th 84 p tents 79 d d a s of th
l tter 8 p r e t came to a t psy Sixty e ght of
th pat e t died f om pulm ary embol m In 40
(58 p c t) a thr mbot c p oc s was f u d in
some part of the body The rat o f males to female
was 3 t D th f om th mbo s or mbol sm
most fr q ent in the fifth nd vth dec ad of l fe
N elati ship bet e the easo f the y e ra d
th ccu e ce of th mbos d embol m co ld
be d termin d b t n nc se n the d nc of
thes condit s i d p ndent of pe t n d
f l t l ties was ide t

Of the 84 p t e t wh de l ped embol m the
Gessen Clin 30 p c nt w ery b e s 5 p c r
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th mbos and embol m a d be ty

The a thors at t s es sh th t m t l ty
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gree w th the f d gs f studies n the b k g
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Th gh t m t l ty f m embolism f ll d
operat on the st ma h d g ll bl d d In
general the da ger of th mbo a d mbol m
is greatest in perations th abdom l ca it
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embolism rev d the mbol m follow d g it r
operation nd n of these 3 cases it wa f t l Th s

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embol m In 13 a es th embol pro s
associated w th an nflam m torv or sept conditio
I only 12 cases w s th cours of the aff t n
enti elv af brl

All p ophy lact c me s r s aga n t th devel p
ment f th mbo s a d mbolism a e important
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trusted onl t at ed person l Of spe alval
part cula ly the c s s f l d p r s ns re sections
of autogeno s blood I th p st t o 3 r s i jec
t ns of a t gen u bl d have been g n n e ry
ca e in wh h the e was re t f c th d el p
ment of th mbo d embol m Si c thus has
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tl c d t ns Th uth uges f rth tests of
th t eatment I j t on f the pat e t o n blood
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cr g the thromb n unts n th bl d Also of
valu a prophylact mea ues e muscul mo e
ments tho o gh ae t n of the lungs nd g t l g
th p t n t t of b d as soon s po bl f t the
perat Good r ults have fte b en obta ned
fr m the us f ro l t r s of a ope c t gl use
s l tio and th ntr e o adm nst t n f a 25
t 3 p cent de tr e solut on by cont u
f son e a p e d of tw the e day suppl
m ted by large d es of ea d c t cs The breath
g f carb n d o de follo g th ope t n is also
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a n r th s used and poss bly th s bst tut on f
local l mba or ple n esth a s d d t l f
n e f the cas r d a Tr nd l b g
p r t n ttempt d intw s mbolct my a
p f med on the l e e t em ty Th ese med t
ben d t n f p phyl ct c l g at on of the l g
e o tru k Boer (Z)

Ka d F d Stoehr W The Q t l f Fat l
Pulm ry Embolism (Z l g d t l f b
l r mbol) D t he Z l h f Ch 93
87

Th ncr e of f tal pulm y mbolism
r enty w t d db th thr th ha s
f the ut p y m rial f th l th g cal f st t
f the Uni e ty f v na L k ma bef
th m th w bl t dem t at th t fat l
pulm ry mbol m u s m h m re f q l
m d cal th ns g c l d t ns T s s f
ses w tud d th f t l ses oc n g n th
pe x d f m o 5 t 9 8 d th e occur g n th
pe od f m o t Th t t l n mbe f fat l
ses f ll w g p e t b th pe ol t g t l
45 wh e th t tal n mbe f ll g m d l
disord th co l pe l l 5

On applying this concept to the treatment of some of the more resistant types of basal-cell epitheliomata he obtained uniformly good results. From 1 to 6 mgm were applied uninterruptedly over a period of from nine to ten weeks. The tumors gradually decreased in size and disappeared. Equally good results were obtained in cases treated primarily according to the author's concept and in cases that previously were radium resistant. There was practically no reaction in the surrounding normal tissues.

Cappelli believes that the amount of irradiation which stops cellular activity in neoplastic cells does not cause radio amitosis in normal cells. He noted that scar tissue replacement of the tumor tissue progressed during the time of the radium application. The general condition seemed to improve, the patient gained weight and the anæmia decreased.

The author plans to study the effect of radio-amitosis on more complicated infiltrating deep and superficial neoplasms.

PETER A. ROSI, M.D.

MISCELLANEOUS

Kovacs, R. Physical Therapy in Daily Practice
Med J & Rec, 1931, **xxi**, 279

This article reviews the indications for physical therapy for the general practitioner and the results to be expected from such treatment.

After a concise classification of the various physical measures on the basis of physics and effects, Kovacs discusses the equipment necessary for the chief forms of physical therapy used in general practice.

The principal conditions in which the general practitioner may employ physical therapy successfully are affections of the respiratory system, arthritis and rheumatoid conditions (including neuralgia and neuritis), and traumatic conditions.

Coryza, sinusitis, and bronchitis can be relieved or almost aborted if treated early with luminous heat. In bronchitis and pneumonia, diathermy is also a powerful adjunct.

In arthritis and rheumatoid conditions, Kovacs follows closely the methods of Pemberton, but uses in addition electrical forms of treatment such as autocondensation, the galvanic bath, monoterminal high frequency and static-wave current, and sparks.

In traumatic conditions the early use of physical measures will reduce the period of convalescence and the permanent disability.

In conclusion the author emphasizes that if good results are to be obtained the use of physical therapy must be limited to conditions in which it is definitely indicated and acceptable results can be expected. The technical application should be made by a well-trained assistant.

GERTRUDE BEARD

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

k d nka S dR i J H pat spl noigraphy
(H p i pl ph > 11 31 93 369

The a thors report e pe me t n a smal in
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f the plen the l r nd th m row f the bo es
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the bod nd t the n t m l st b t th dos
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the h pat c p r nchyma and th glom rul f th
k d s

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a ce f l l n e l n l s s

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l w mje t Th d s th tg nd
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F und L. M thod f l diatig Ca l m
(B t h l gsm thod d k m 11 dial
93 35

Treatme t by d ded d s w d l ped
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charact r th c to t the f l d The bett
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th d ded d s c mpr d th the f l d e
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and the f ct that by d vid ng the d se the path
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th growth () it r dose i b l ty nd (3) the
r j d ty of t g th

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sults with roentgen irradiation in his three cases. The irradiation should be energetic and long-continued as new foci of xanthomatosis appear in non-irradiated areas. In conjunction with the roentgen therapy the patient should be given a diet which will correct the hypercholesterinemia. Insulin and extract of hypophysis and thyroid may also be tried.

AUDREY GOSS MORGAN, M D

Stevenson, G H, and Cuthbertson, D P. Blue Sclerotics and Associated Defects. A Study of Four Families, with Notes on Their Mineral Metabolism. *Lancet*, 1931, CCXXI, 782.

The authors report a study of four families in which fragility of the bones, blue sclerotics, laxity of the joints and ligaments, and osteoporosis appeared, either alone or in combination, in several generations. These phenomena apparently had no relationship to sex.

Metabolism studies were made on two children and two adults. In the children, calcium and phosphorus retention was definitely decreased, but a positive calcium and phosphorus balance was maintained. In the adults there was no variation from the normal in the absorption or excretion of calcium or phosphorus.

Cod liver oil and radiostol (British viosterol) did not affect the fragility or rate of healing of the bones.

MAURICE L. DALE, M D

Ferrari, R. Contribution to the Study of Visceral Pains. Lemaire's Phenomenon (Contribucion al estudio de la algia visceral). El fenomeno de Lemaire. *Bol inst de clin quir*, 1931, XI, 125.

In 1925, Lemaire advocated the subcutaneous injection of a 0.5 to 0.1 per cent novocain solution in cases of visceral pain referred to the skin. From observations in twenty-seven cases, Ferrari has come to the conclusion that neither Mackenzie's nor Lennander's theory of the mechanism of visceral pain explains all cases satisfactorily.

Lennander's theory that visceral pain is produced by stimulation of a serous membrane adjacent to an organ will explain cases with an inflammatory focus in contact with the peritoneum, as in appendicitis, cases with traction on mesenteric structures, and visceral pains caused by inflammatory or neoplastic diseases involving the parietal peritoneum. In such cases the cutaneous infiltration of novocain does not give relief.

Cases in which novocain infiltration has good results support Mackenzie's theory that the stimulus is transmitted through the sympathetic system from the viscous to the central nervous system and from there is referred to the skin areas through a sensory nerve.

Novocain infiltration makes it possible to determine whether the pain is of peritoneal or visceral origin and may facilitate palpation by relieving the pain, and the resistance of the abdominal wall. It may be of value also when the use of opium derivatives is contra indicated.

ALBERTO PRIETO, M D

Ravaut, Valtis, and Guerra. Miliary Tuberculosis of the Skin of Haematogenous Origin and Tuberculides (Tuberculosos granulaires de la peau d'origine sanguine et tuberculides). *Presse med*, Par, 1931, XXXIX, 1464.

While the histology of tuberculides is well known, their pathogenesis has remained a subject of debate. Efforts to prove the tuberculous nature of the lesions by direct demonstration of the bacillus or by inoculation experiments have been nearly always unsuccessful. Toxins of certain strains of bacilli and of the terrain have been suggested as causes. Recent studies of the filterable elements of the tubercle bacillus have directed research into new channels. Since the reports of Fontés in 1910, it has been shown that in experimental animals the filterable form produces a tuberculosis characterized, not by tubercles, but by generalized hyperplasia of the lymph glands. The bacilli can be demonstrated in the nodes either on the first examination or after inoculation of guinea pigs in series. The authors have applied this method of experimentation to the tuberculides.

Tissue from a subcutaneous sarcoid ground in a sterile mortar was suspended in salt solution and the supernatant liquid injected subcutaneously into six guinea pigs. Two of the animals died the following day and one on the sixth day. Two weeks later the remaining guinea pigs were tested with tuberculin. They reacted negatively. Necropsy on a guinea pig which died on the twentieth day revealed merely a slight enlargement of the tracheobronchial lymph nodes. In these nodes a few acid-fast bacilli were found. In the case of a guinea pig which died on the twenty-ninth day the necropsy findings were similar. In the last animal, which was killed on the thirty-seventh day, no bacilli were found. Thus, in the sarcoid, a virus analogous to the filterable form of the tubercle bacillus was demonstrated.

Four cases of papulonecrotic tuberculides were studied.

In the first case the lesions were of three days' duration. Material was inoculated into a guinea pig and the animal sacrificed twenty-three days later. At necropsy on the guinea pig the lymph nodes were found generally enlarged, and after repeated examinations typical tubercle bacilli were discovered. Because of these positive results and the multiplicity of the eruptive lesions in certain cases of papulonecrotic tuberculides, the authors were led to study the virulence of the blood.

The second case reported was that of a young woman who had only recently recovered from a tuberculous cervical adenitis and had exposed herself excessively to the sun. Two days after this exposure, widespread lesions with a varied character appeared. On the forehead, cheeks, nose, and chin there were vesicular lesions suggesting an eczematous, irritative dermatitis. On the cheeks, certain infiltrated areas suggested lupus erythematosus. On the neck, there were numerous red papules from 3 to 4 mm in diameter, some of which were ulcerat-

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

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Oertel, H., Nye, H., and Thomlinson, B. A Further Contribution to the Knowledge of Innervation of Human Tumors. *J. Path. & Bacteriol.*, 1931, **XXVI**, 661

During the several years in which the authors have been studying the innervation of human tumors they have evolved a special technique which, when carefully followed, enables them to demonstrate tumor nerves, their terminations, and their relationship to cells. They select portions of tumor which have not been affected by secondary nutritive changes, fix them in neutral formalin, prepare fresh sections from 20 to 30 microns thick, and stain the sections by their own modification of the Bielschowsky method.

The article contains twenty excellent photomicrographs showing such nerves in breast cancer, myoma, and fibrosarcoma. Newly formed non-medullated nerve fibers are clearly demonstrated. From the larger nerve trunks fine axis cylinders split off and finally terminate in various forms of endings directly upon or to the side of the nuclei of the parenchymal cells. The resemblance to normal innervation of non-cancerous tissue is striking.

The authors conclude that mature and immature human tumor tissues are innervated, that not only the blood vessels, but also the stroma and parenchyma of the growing tumor are supplied with nerves.

C. D. HAAGENSEN, M.D.

Martland, H. S. The Occurrence of Malignancy in Radio-Active Persons. *Am. J. Cancer*, 1931, **XX**, 2435

This report is based on a clinical study and a study of the findings at autopsy in the cases of persons who had been engaged in painting watch dials with luminous paint containing radium and mesothorium.

The poisoning was caused by the habit of pointing the brushes in the mouth. Most of the paint swallowed passed rapidly through the gastro-intestinal tract and was eliminated, but a small amount was continually absorbed and eventually stored as an insoluble sulphate, in particulate or colloidal form, in the main organs of the reticulo-endothelial system, especially the bones. The deposits in the bones were generalized over the entire skeleton. The lethal amount of radium element ranged from 100 to 120 micrograms (a microgram is 0.001 mgm.) and emitted the characteristic radiations continuously.

Of eighteen known deaths which were attributed to radium poisoning eight were proved due to that cause by autopsy. Thirteen patients died with a leucopenic anemia of the regenerative type (bone marrow). Periods of irritative stimulation of the blood-forming centers and over stimulation were followed by a period of exhaustion. An intense irradiation osteitis often developed in various parts of the skeleton. In the cases in which death occurred early the outstanding clinical features were an extensive intractable necrosis of the jaw and anemia. The bone marrow picture was typical of the poison-

ing, showing predominance of primitive stem cells mixed with megaloblasts, normoblasts, and eosinophilic myelocytes.

Five patients died of osteogenic sarcoma involving the scapula, pelvis, femur, and orbit. Three with definitely known poisoning and four who are believed to be poisoned are still living. Four cases in which poisoning was definitely proved at autopsy are reported in detail. Incinerated samples of bones revealed radium, and the amounts were measured with the electrometer. The author presents roentgenograms, photographs of specimens, photomicrographs, and diagrams of the tumors and their metastases.

The origin of the osteogenic sarcoma is discussed. In the cases of radium-dial painters a definite factor—the alpha particle of radium—was established as the cause. The author speculates upon the effect of ionization on cancer.

NATHAN N. CROHN, M.D.

Ball, H. A. Autopsy Observations on 116 Cases of Malignant Disease, in 89 of Which Experimental Injections of Suprarenal Cortex Extract (Coffey-Humber) Were Given. *Am. J. Cancer*, 1931, **XI**, 1352

The author reports gross and microscopic observations made at autopsy in 116 cases of malignant disease, in 89 of which experimental injections of the Coffey-Humber extract of the suprarenal cortex had been given. The minimal number of injections was 16.

No change differing essentially from the changes usually found in far advanced malignant disease could be determined. The observations indicated that the incidence of metastases to the suprarenal glands is higher than that recorded by most pathologists.

GEORGE A. COLLETT, M.D.

Grile, G. W., Telkes, M., and Rowland, A. F. The Nature of Living Cells, with Special Reference to the Nature of Cancer Cells and of Fatty Degeneration. *Arch. Surg.*, 1931, **LXXII**, 703

This is a preliminary report of research undertaken to study the biology of autotrophic cells in the hope of throwing light on the cause of carcinoma.

From the brains of freshly killed animals, the proteins, lipoids, and electrolytes (extract of the ash) were extracted. When these were mixed, immediate organization took place. Nucleated, cell-like forms appeared, which took vital stains, multiplied by budding or division, grew clear, consumed oxygen and gave off carbon dioxide. Active amoeboid movement was also occasionally seen. The lipoids and proteins of other organs did not organize, but when proteins of another organ were mixed with brain lipoids, immediate organization took place. Irradiation, toxins and stimulants had the same effect on these structures as on living organisms. Toxic agents seemed to alter the lipoids so that fat globules formed as in fatty degeneration. The form of the cells depended on the hydrogen-ion concentration of the electrolytic solution, pH 7.5 always causing clear cells. Some of the cell mixtures lived

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That the blood is a favorable medium for bacterial growth has been demonstrated experimentally by the addition of human blood to ordinary culture media. This is of particular value in the preparation of cultures for autogenous vaccines.

Streptococcic septicæmia may be prolonged and associated with mild endocarditis or joint affections. The symptoms are obscure. The condition begins with moderate anæmia, pallor, and loss of weight and energy. Finally there are signs of a definite cardiac lesion.

Severe anæmia may develop quickly from septicæmia. Hemolytic streptococci and the staphylococcus perfringens are particularly active in its production. Anæmia occurs also in septicæmias which are prolonged but not grave.

With regard to rheumatism, a distinction is made between septicæmia with an articular localization and true acute articular rheumatism. In the former, the salicylates are of no value. Rheumatic syndromes may be due also to acute tuberculosis causing polyarthritis.

Tuberculosis may cause all types of fever, but in some cases fever is absent, possibly because of paralysis of the thermogenic center. Tuberculous septicæmia may exist over a considerable period of time without focal lesions, presenting the general picture of typhoid fever. After varying lengths of time, localizing signs appear in the lungs, meninges, or elsewhere. In all cases, blood cultures, a study of the leucocytic picture of the blood, and roentgenograms will reveal the nature of the condition.

The article contains numerous case histories.

A. E. TAFT, M.D.

Dimitriu, V., and Somnea, G. O. The Therapeutic Action of Hirudin in Phlebitis, Septicæmia, and Certain Bacterial Conditions (Action thérapeutique de l'hirudine dans les phlébites et dans quelques affections de nature microbienne). *Presse med.*, Par., 1931, **XXIX**, 1359.

While its method of action is not entirely clear, hirudin is considered to have anti-coagulating and even destructive effects on the phlebotic clot. Some have believed it curative while others have considered it only preventive of phlebotic complications. The authors have demonstrated that it does not prevent the formation of, or dissolve, the phlebotic clot, but aids the organism to rid itself of the bacteria of attenuated virulence which produce phlebitis. According to Tempsky's statistics, postoperative phlebitis is most frequent after operations on organs such as the rectum, stomach, and appendix which contain a large number of septic products.

To determine the influence of hirudin on the white cells, the authors examined a smear of the blood flowing from the wound after removal of the leech and a smear of the blood coming from the leech after suction. They found that the leucocytes are the first cells attacked by the action of the leech and undergo the most profound alteration in their constituents as well as their number. The blood taken

by the leech shows marked destruction of the erythrocytes and diffusion of hæmoglobin. However, it is the leucocytes, and especially the lymphocytes, that receive the first shock and undergo the greatest changes. Therefore the leucocytes examined on the slide rarely present characteristics which differentiate them and allow an estimation of their percentages. Microscopic examination of the blood flowing from the wound after removal of the leech showed an inversion of the formula such as is seen in colloidoclastic shock. However, the shock was scarcely appreciable clinically. Vasomotor phenomena were slight, but the pressure was usually one division lower on the Vaquez-Laubry apparatus. Leucopenia did not occur in all cases.

The experiments show that the greater the number of lymphocytes the more it decreases under the action of hirudin. The diminution is gradual. The change ranges from zero to a decrease of 80 per cent. It takes place immediately and continues for from forty to ninety minutes. When the decrease is slight, an increase begins after fifteen minutes. When the lymphocytes number about 800 per cubic millimeter they no longer diminish, but undergo an increase which doubles or triples their number in from thirty to sixty minutes. In every case the number of lymphocytes is notably higher twenty-four hours later. The total number of leucocytes follows the curve of the lymphocytes. The neutrophils, while following a curve contrary to that of the lymphocytes, show proportionately much smaller numerical variations. The eosinophiles always increase and reach their initial number from six to twenty-four hours later.

In five cases of septicæmia reported in this article the condition resisted other treatment, but yielded to forcing of the circulation of white cells with hirudin. Recovery resulted also in two cases of acute febrile nephritis in which hirudin was used.

Hirudin favors the displacement of leucocytes between the reticulo endothelial system and the blood, it unblocks the cells from the reserve focus. Through their displacement, the leucocytes free the blood of bacteria and thereby remove the cause of the phlebitis. The use of hirudin combined with a fixation abscess is an important curative treatment in septicæmias. The authors believe that the failure of turpentine oil to cause the formation of a fixation abscess in septicæmia is due to blocking of the leucocytes in the reticulo-endothelial system. In such cases injections of adrenalin followed by injections of hirudinized plasma will overcome the blocking and facilitate displacement of the leucocytes, thereby causing the formation of a fixation abscess and rapid cure of the septicæmia.

PAGE

DUCTLESS GLANDS

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GENERAL BACTERIAL PROTOZOAN AND PARASITIC INFECTIONS

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NOTE—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS ISSUE ON WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

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test of the immaturity of the prostate. The effect is much more striking in the case of the testis than in the case of the immaturity of the ovary. Daily injection of the aqueous fluid of the prostate gland (antitumor) has been followed by a marked growth in the testis of the birds and an accompanying enlargement of the thymus gland. The author believes that the value of the treatment of the prostatic gland depends upon the general condition of the animal and the principle and the amount of the treatment.

Studies of the luteal phase of the menstrual cycle in the urine of pregnant women indicated that in the immature body of the ovary the ovulation is inhibited although there is some follicular development. The latter process does not limit growth in the ovaries of the premenstrual phase of the cycle.

Copulation which appears in pigeons and doves in the same females produces different degrees of development of the glandular structures at the same time. The thickness of the mucosa of the development of the prostatic gland has been produced by the injection of certain extracts of the prostate of the prostate gland. It can be brought about by any phase of development of the prostate gland. The effect of the prostatic gland on the development of the prostatic gland is the same as the effect of the prostatic gland on the development of the prostatic gland. The effect of the prostatic gland on the development of the prostatic gland is the same as the effect of the prostatic gland on the development of the prostatic gland.

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W. L. J. P. R. M. D.

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Although many of the functions of the ductless gland remain obscure, it is known that the anterior lobe of the pituitary gland promotes growth. It is generally believed that this effect is exerted upon the organism as a whole. It is limited to the growth of the chondrocytes, the reproduction of the Zerkowul that in 15 percent of 18 cases of malignant disease the hormone of the anterior lobe of the pituitary gland appears in the urine in sufficient quantity to be a factor in the development of the disease. In an experimental study of the effect of the anterior lobe of the pituitary gland on the development of the disease, the results are as follows: degeneration of the hepatoprotein case.

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MARCH, 1932

International Abstract of Surgery

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and Absorpt f Pl al Fl d

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S m lating Absc s f th Lung d B chec
tas

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SURGERY OF THE ABDOMEN

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Light f Ul rs Meck l D rticulum and
th P toperat Ulcers in th J junum

P COU E G trod oden l Ul Resulting from
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f th St ma h d D od m

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th Fre ly P r f rat d Ul f th St m h d
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KIM M S and Ivy A C The Pre t f E
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SURGERY OF BLOOD AND LYMPH SYSTEMS

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Lymph Gland d Lymphatic V ls

R n W F J Th Lymphat vssel f
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Inf ti s

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73 P AN G E Th R tg R y d R d m
th Diagn d T tm t f C n m
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Gla ds f th Neck

75 H RME W D R d th rapy Ca f th
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th Diagn d T tm t f C r c m

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INTERNATIONAL ABSTRACT OF SURGERY

MARCH, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Dowsett, E B Operative Procedure for Cysts of the Jaws *Proc Roy Soc Med*, Lond, 1931, **XXV**, 47

The author states that there are two operative methods for cysts of the jaws—the closed method and the open method. In the closed method a suitable gum flap is raised, the outer wall, the entire contents, and the lining membranes of the cyst are removed, and the gum flap is then sutured in place. This method is suitable only for small cysts. The author prefers the open method. In this procedure a flap of gum is lifted so that it is quite free from the lateral limits of the cyst cavity, the dissection is carried out beyond the depths of the sulcus so as to free all of the soft tissues from the limits of the entire outer side of the cyst, the cyst is then opened, and the exposed cyst wall and membrane are removed. Dowsett leaves the lining membrane intact on the inner wall of the cyst except in cases of long-standing suppuration. In the latter he places the original flap in such a way that its raw surface lies against the raw surface dissected from the cyst wall. When this is done the entire bone cavity becomes saucer shaped and open to the mouth and is soon completely covered with epithelium.

JOHN H GARLOCK, M D

Lindner, E Studies on the Etiology of Osteomyelitis of the Jaw on the Basis of the Case Histories in the Dental Institute and Surgical Polyclinic in Munich (Untersuchungen ueber die Aetologie der Osteomyelitis der Kiefer an Hand von Krankengeschichten aus dem zahnärztlichen Institut und der chirurgischen Poliklinik Muenchen) *Deutsche Monatsschr f Zahnk*, 1931, **XLV**, 589

As the lower jaw is involved in only 19 per cent of all cases of osteomyelitis and the upper jaw is involved even less frequently, osteomyelitis of the jaws is discussed only briefly in the textbooks on general surgery. The lower jaw resembles the long tubular

bones in its structure as it is supplied entirely by a central vessel which gives off branches to the marrow cavity. The small branches do not anastomose with other vessels. Therefore when they become obstructed the obstruction interferes with the nutrition of the area supplied by them and necrosis results. Obstruction may be caused by thrombosis resulting from an inflammatory process. Whether the vessel is blocked by a thrombus or masses of bacteria, there occurs a nutritional disturbance leading to marked hyperemia and extravasation of serous fluid. Pus accumulates in the medulla in multiple pockets or as a single large abscess. Osteitis and periostitis develop. The causative agents are usually the staphylococcus pyogenes aureus and staphylococcus pyogenes albus. Sometimes the former is present in pure culture. The streptococcus pyogenes causes a very severe syndrome. Typhoid bacilli, influenza bacilli, and pneumobacilli are the causative agents only when the patient has been previously afflicted with the corresponding sickness. The infective agent may reach the jaw through an external wound or by way of the blood stream.

Kuhn made a study of forty-four cases, in eighteen of which the condition was the result of dental caries and in only six of which it was due to a blood borne infection. Infection by way of the blood stream is especially frequent in infancy, and as in these cases the unerupted teeth are usually markedly involved the condition is often designated "sequestering dental tartar infection." Infection from an external source is of greater importance to physicians and dentists than the less frequent blood-borne infection.

According to Perthes, its points of origin are (1) a carious tooth, (2) gangrenous pulp in a tooth which is not carious, (3) an alveolus exposed by extraction, (4) the gum, and (5) a fracture of the jaw or a wound of the soft tissues extending down to the periosteum. Accordingly the development of the condition is favored by incorrect treatment of an infected root, trauma causing death of the pulp, extraction with-

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In general pathology an increase in tissue fluids is called oedema. Therefore the increased residual hypertension in the glaucomatous eye must be considered a kind of oedema. In 1929 the theory that all of the symptoms of glaucoma are due to the hardness of the eyeball was shown to be erroneous. The mydriasis of glaucoma is not due to the ocular hypertension. Neither dilatation of the iris nor diminution of the depth of the anterior chamber has been produced experimentally by increasing the pressure of the vitreous. These two symptoms are due to oedema.

The author agrees with von Graefe that amaurosis with excavation should be classified with glaucoma. He believes that Elschnig is correct when he speaks of glaucoma without hypertension and of hypertension without glaucoma. In glaucoma simplex the aqueous remains chemically normal. As in angioneurotic oedema of other parts of the body the oedema of glaucoma is subject to frequent variations. Although it involves all of the tunics of the globe, the tension may be greater in either the anterior segment or the posterior segment. When it is greater in the anterior segment there is glaucoma with a deep chamber, whereas when it is greater behind the lens it produces the usual clinical picture of glaucoma with a shallow chamber. One might therefore very properly speak of posterior glaucoma and anterior glaucoma.

The author believes that the initial lesions in glaucoma are chiefly lesions of the capillaries causing an increase in the permeability of their walls and an increase in the pressure of the blood. A hindrance in the venous circulation causes a still further rise of the blood pressure, first in the capillaries and then in the arteries which are forced to combat the obstruction. The increase of the tissue fluid is not due solely to an increase in the pressure in the capillary network. The increased quantity of aqueous and the high capillary pressure are interrelated. The causes behind these phenomena are toxic, infectious, and, above all, nervous.

The anatomical element first affected in glaucoma is the capillary itself. The modification in the permeability of the walls has two effects: a modification of the exchange from the blood to the aqueous—an increase in the production of the tissue fluid—and a modification of the exchange from the aqueous to the blood—a diminution in the reabsorption of the fluid. In order to explain the increase of the aqueous a modification in the osmotic pressure of colloids might be assumed, but research has shown that this pressure of colloids in glaucomatous persons does not differ from that in normal persons. Krogh has demonstrated that the capillary vessels are affected by three principal influences—hydrodynamic, nervous, and humoral factors.

Whether the systemic pressure is high or low in a case of glaucoma the local blood pressure is always high. This increase of the capillary pressure may be due to a hindrance in the venous circulation or a diminution in the caliber of the capillaries. The

increase of the capillary pressure cannot be attributed to the ocular hypertension.

A derangement of the vasomotor mechanism controlling the ocular circulatory bed might be brought about by various toxic and infectious agents acting directly or indirectly on the nervous system. All operations for glaucoma may be either poor or good regardless of the technique because they act only by nervous shock and affect the cause of the disease only indirectly. LESLIE L. MCCOY, M.D.

Wolff, E., and Davies, F. A Contribution to the Pathology of Papilloedema. *Brit J Ophth*, 1931, 11, 609.

It is generally believed that the swelling in papilloedema does not affect the whole disk at once and that the inner (nasal) edge of the disk is affected before the outer (temporal) edge. The theory regarding the production of papilloedema which is most widely accepted in England is based on the work of Deyl, Dupuy-Dutemps, and Patou and Holmes. According to this theory, the increased intracranial pressure is transmitted to the subarachnoid space around the optic nerve since this space is continuous with the intracranial subarachnoid space (Schwalbe), and compression of the central retinal vein and its accompanying lymphatic vessels as they cross the subarachnoid space results in dilatation of the retinal veins, oedema of the disk, and later, exudation and hæmorrhage.

Schiek is of the opinion that the subarachnoid space around the optic nerve communicates directly with lymphatic spaces around the central retinal vessels and that therefore any increase in intracranial pressure will force the cerebrospinal fluid into the optic nerve along the central retinal vessels, thereby causing the phenomena of papilloedema. Under such conditions the swelling of the nerve head, produced by distention of the perivascular lymphatic sheaths, would first be seen at the bottom of the optic cup, pushing forward the internal limiting membrane, and subsequently the swelling would be visible at the places where the large vessels cross the edge of the disk. Schiek's theory of the method of production of papilloedema thus offers an explanation for the onset of papilloedema at a certain definite part of the nerve head. It is doubtful whether true lymphatic vessels exist in the retina (which is part of the central nervous system). Schmidt-Rimpler first suggested that it is the cerebrospinal fluid which gets into the nerve and causes the swelling of the disk. If this theory is correct papilloedema is a sort of rather inefficient safety valve for the escape of cerebrospinal fluid in cases of increased intracranial pressure.

The authors' findings in studies on dogs, cats, and rabbits are summarized as follows:

1. Non diffusible dyes injected into the cranial subarachnoid space at pressures compatible with life did not enter the optic nerve.

2. The clumps of previous investigators that papilloedema may be produced by the injection of fluids

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resistance remains undisturbed, signs of wound infection after the operation are rare. Of the 80 cases reviewed, primary suppuration occurred in only 2. In 3 other cases infection developed in connection with pressure ulcers and was therefore the result of a technical error. In 2 cases suppuration was transmitted secondarily to the bed of the transplant as the result of infection from other operations carried out later in the vicinity of the introduced cartilage. In 4 of these 7 cases the transplant remained intact in spite of the suppuration. In 1 case it became considerably smaller during the course of a few weeks, in another, it was removed surgically, and in a third it was quickly extruded. Of the 4 cases with survival of the cartilage, permanent maintenance of the graft was confirmed after four, five, and seven years in 3. On account of the good resistance of the transplanted cartilage to infection, conservative treatment is to be preferred at first even in the presence of severe suppuration. Operative removal of the transplant is definitely indicated only in cases complicated by ulcers.

Permanent results of the cartilage plastic. This part of the report is based on 28 of 45 cases in which the operation was done two or more years ago. Sixteen of the 28 patients have been followed for at least four years, and 1 has been under observation as long as six years and three months. For the more accurate determination of possible changes in the cosmetic result, plaster masks were made repeatedly in addition to photographs. The findings are summarized as follows:

1 The cosmetic result of the operation was well maintained in all cases, even in those followed for years.

2 In 2 cases even the most careful examination by a comparison of plaster masks lying side by side showed no traces of narrowing of the transplant during a period up to four and five years.

3 In all of the other cases a comparison of the plaster casts showed only very slight narrowing of the transplanted piece of cartilage.

4 This "emaciation" lasted, as was shown by the cases followed longest, only from one and a half to two years and then stopped.

5 The consistency and the form of the cartilaginous transplant remained unchanged even during observation for years. In some of the cases the result remained permanent in spite of very unfavorable factors such as irrigation of a piece of cartilage that had fallen and become soiled with formalin alcohol and hydrogen peroxide previous to its introduction (2 cases) and suppuration of the region of the transplant bed either soon after the operation or some time later (3 cases).

In most of the cases, and in those observed longest, the perichondrium was utilized either not at all or only to a slight extent in the transplantation. The good results of these interventions indicate that the perichondrium plays no especially important part in the success of the operation or the permanency of its results.

As compared with bone transplantation, cartilage transplantation gives much better permanent results. In support of this conclusion the author cites an osteocartilaginous transplant from a rib which was removed surgically two years after rhinoplasty. The bony half of the plate was considerably atrophied, but the cartilaginous part was well maintained. Being easily removed and shaped, cartilage renders excellent service in the most varied rhinoplastic operations. Its permanence meets clinical demands, and the free transplantation of cartilage may be designated as the method of choice for nasal support.

A note following the article states that the author has performed 32 additional operations. These increase the number to 112. Of 10 cases of saddle-nose and other defects which are more easily treated without a plastic on the soft parts and in which transplantation was done through a low incision (at the tip of the nose or in the membranous septum), primary suppuration occurred in 3, whereas of 76 cases in which operation was done through a higher incision it occurred in none. E. Hesse (2)

Fenton, R. A., and Larsell, O. Reticulo-Endothelial Components of Accessory Sinus Mucosa. Experimental and Clinical Observations. *Arch Otolaryngol*, 1931, LV, 586.

The authors report studies of the mucosal linings of the sinuses of cats to determine (1) the normal histocyte content of the sinus mucosa, and (2) the changes caused by trauma, heat, and bacterial inoculation. They found that physical trauma and bacterial inoculation caused an increase in the histocytes, and that heat and the injection of reticulin caused a rapid increase in the polymorphonuclears.

Numerous histocytes were found also in the mucosal linings of human sinuses treated post-operatively with trypan blue.

JAMES T. MILLS, M.D.

Brown, R. G. Skiagrams in Diseases of the Maxillary Sinus, Their Surgical and Pathological Significance. *J. Laryngol. & Otol.*, 1931, LV, 670.

Brown reports experiments which he carried out in a roentgen study of pathological states of the maxillary sinus.

In the first experiment, in order to delineate the foramina and fissures at the base of the skull and show their relationship to the maxillary antrum in the dry skull, he filled these foramina and fissures with metal before making the roentgenograms. The landmarks included the sphenoidal fissure, the optic foramen, the foramen ovale, and the foramen rotundum. Note was made also of various bony ridges, ethmoidal cells, accessory antral cavities, and the antral walls. In the second experiment a polypus was introduced into the antrum of a dry skull and roentgenograms were taken. In the third experiment a polypoid mucous membrane was introduced into the antrum of a dry skull and roent-

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tion Surface radium supplemented by radium buried along the edge of the lesion gives the best results. In cases of malignancy of the nasal sinuses, surgery alone has been very unsatisfactory, but when operation has been combined with irradiation the results have been improved. In inoperable cases, it is questionable whether any treatment should be instituted, but in rare cases in which the growth has not extended too widely into the zygomatic fossa, X-ray treatment may relieve pain and bleeding.

As nearly all growths in the nasopharynx are highly malignant, they should always be irradiated before biopsy is undertaken. The X-rays and radium should be used in combination. X-ray treatment alone should be reserved for palliation.

Endotheliomata are not common in the palate, pharyngeal wall, nasopharynx, and neck. In very rare cases they begin in the larynx, back of the tongue, face, orbit, or lachrymal glands. The treatment consists of roentgen irradiation followed after a week by enucleation and the insertion of radium.

In carcinoma of the tonsil and mesopharynx, surgery is useless. The primary growth should be treated with radium needles and any remaining induration should be removed with the diathermy knife. In all cases the neck should be treated by massive irradiation both before and after operation.

In lesions of the soft palate and uvula the prognosis is more serious than in lesions of the hard palate. X-ray irradiation combined with radium irradiation should be used and any remaining induration excised by diathermy.
EARL O. LATIMER, M.D.

Rienhoff, W. F., Jr. The Lymphatic Vessels of the Thyroid Gland in the Dog and in Man. *Arch Surg*, 1931, LVIII, 783.

By means of injection experiments the author found that the lymphatics of the thyroid originate in an anastomosing endothelial reticulum or plexus which lies in the interfollicular spaces of the gland. This interfollicular plexus consists of communicating capillary lymphatic channels which connect rather dilated endothelial sacs or small pockets, termed "bursellæ," which, together with the con-

necting lymphatic capillaries, form a closed lymphatic system. Serial sections studied for the dye injected showed no communication between the lymphatic capillaries of the interfollicular plexus and the lumina of the follicles.

The remaining lymphatic vessels of the thyroid may be divided into two main plexuses: (1) an intraglandular plexus composed of large collecting trunks which are situated on the surface of the parenchyma along the course of the septa and form frequent anastomoses with each other and the interfollicular plexus, and (2) an extraglandular plexus located about the outer surface of the thyroid external to the network of blood vessels which supplies the gland but beneath or internal to the fibrous capsule investing the gland. From the latter plexus arise the larger collecting trunks that accompany the superior thyroid vessels to the cervical lymph glands and also the trunks that form a reticulum in the pretracheal fascia draining into the mediastinal glands.

Except for a difference in size, the interfollicular, intraglandular, and extraglandular lymphatic system of the human thyroid is identical with that of the dog.

The author concludes that, from a purely structural standpoint, it is unlikely that the specific secretion of the gland is transmitted by its lymphatic system.
M. HERBERT BARKER, M.D.

Sjostrom, P. M. Studies of Postoperative Tetany. *Acta chirurg Scand*, 1931, LXVIII, 325.

The author reviews seven cases of postoperative parathyreoprival tetany which were followed for a long time, three of them for several years. Numerous determinations were made of the calcium content of the blood and the electrical irritability. Without treatment, the condition became latent and the patient fully capable of work although the calcium content of the blood remained low.

Several therapeutic preparations have been tried—among others Collip's parathormone and vigantol—to determine their effect on the clinical symptoms, the blood calcium, and the electrical irritability.

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signs of increased intracranial pressure, and a definitely recognizable retinitis. The choking of the optic disks may be as marked as 6 diopters, and the spinal fluid pressure may reach as high as 500 mm of water.

In differentiating this condition from brain tumor it is important to bear in mind that high blood pressure is rarely if ever caused by slowly developing mass lesions of the brain.

In the treatment, decompression is not justified as withdrawal of spinal fluid and other methods of reducing the intracranial pressure will give better results.

DAVID J. IMPASTATO, M.D.

Pacetto, G. Experimental Studies of Free Muscle Transplantation to Fill Defects of Brain Substance. Course and Results (Il trapianto muscolare libero adoperato per colmare perdite di sostanza cerebrale: evoluzione ed esiti. Ricerche sperimentali). *Polidm*, Rome, 1931, *XXXIII*, sez. chr. 569.

Following a review of the literature, the author reports experiments on rabbits and dogs in which he removed fragments of brain cortex and filled the defects with free autoplasmic or heteroplasmic muscle transplants. He has found muscle very well adapted for filling defects in brain substance because it is easy to obtain, it has a marked hemostatic action, and it is very well tolerated. Studies made after varying periods of time showed that unless suppuration takes place no adhesions of any consequence are formed between the transplant and the dura or between the dura and the bone.

If the transplant is placed deep in the brain substance it tends to become smaller and to approach the surface. It finally disappears by a process of aseptic necrosis and is surrounded and replaced by a newly formed connective tissue which originates from the meninges, the vessels, and the sustaining tissue of the cerebral substance.

Autotransplants cause only slight changes in the host tissue, while heterotransplants cause more marked and diffuse lesions. Therefore the former are to be preferred to the latter.

AUDREY GOSS MORGAN, M.D.

Frazier, C. H. Indications for the Surgical Treatment of Primary Pituitary Lesions, with a Description of Approved Methods of Approach. *Pennsylvania M. J.*, 1931, *XXX*, 88.

This article deals essentially with the diagnosis and treatment of pituitary adenomata. The surgical indications for the removal of these growths are changes in the visual field and the X-ray demonstration of alterations in the shape of the sella turcica. In some cases the author considers early signs of acromegaly and diminution of sexual function as indications for operation.

The incision begins 1 in. below the hairline in the middle of the forehead, follows the midline for several centimeters, and then curves backward and downward to terminate just above the ear. The

bone flap has its base in the temporal region, its anterior margin as low as possible without opening the frontal sinus, its superior margin 2 cm. from the midline, and its posterior margin 7 cm. behind the anterior margin. When the bone flap is reflected the anterior horn of the ventricle is tapped if the dura is tense. The dural incision is next made parallel with the anterior margin of the cranial opening. The pituitary gland is then approached from the side by traversing the floor of the anterior fossa, the surface of the frontal lobe being protected from laceration by means of waxed strips of tape. One centimeter beyond the optic nerve the tumor is seen between the optic nerves and in front of the chiasm. The capsule of the tumor is opened and the contents, solid or cystic, are evacuated. The capsule is then separated from the optic nerves and chiasm and all of it except the portion on the floor of the pituitary fossa is removed.

DAVID J. IMPASTATO, M.D.

Heuer, G. J. The Surgical Approach and the Treatment of Tumors and Other Lesions About the Optic Chiasm. *Surg., Gynec. & Obst.*, 1931, *liii*, 489.

The author traces the evolution of the operative approach to lesions about the optic chiasm, notes the advances that have been made in our knowledge of the many lesions in this region causing optic atrophy and visual disturbances, and comments upon the present conceptions of the treatment of these lesions. A very detailed resume of the most important of the many surgical approaches to the chiasmal region is given.

The intracranial approach, the first used, had a very high mortality (from 70 to 80 per cent), mainly because the operators lacked skill and training in neurological surgery. Therefore, following the report of the successful partial removal of a tumor by a transsphenoidal route, it was not surprising that many surgeons should adopt the latter approach which, while not technically easy, may more readily be used without special training in neurosurgery. However, as the development of the art of neurosurgery has now reduced the mortality of the intracranial approach to as low as that of the transsphenoidal approach and as better and more permanent results are obtained by the intracranial than by the transsphenoidal approach, the majority of neurological surgeons today prefer the intracranial approach for most cases. Another factor determining the trend of opinion in favor of the intracranial approach has been the growing appreciation, due largely to the use of this approach, of the variety of lesions about the chiasm which are amenable to surgical treatment.

The present-day treatment of all of the common parachiasmal lesions is discussed, and the question of X-ray therapy versus surgical intervention for pituitary adenomata is considered. The author believes that in cases of pituitary adenoma with advancing acromegaly and sellar headaches but

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

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w h i c h h e u m e l f t e d M o c k d v i d t h e m t a
g r p s a c o d i g t s y m p t m n d t t m t

I G r o p r w e c a s h h v i d c e f f c
t u r e f t h e kull a s h n b y r t g n a m i n a t n
b e t h r e w e p a t i c a l l y c l c i s g s v m p
t o m T h t r m t n c l d o f e t n b d f r
t h c e w k s d e l b e r v a t u The c s
m d e u p 4 p e e n t f t h t a l m b e

In G r u p w e a e s w t h d i t b a f n
s c i o u s s s l w i g o f t h p u l s a d p t n l
l w e g o f t h b l o o d p s l s f b l o o d c
b r o s p l f l u i d f m t h p u l l r y d

f l e x c h a g a n d e t g e d n f f a t f
t h e kull T h e s a s w r e c l o y b e r e f t h
d e e l p m t o f o l n o l g c a l g s T h t t
m t o n i s t e d f i r s t o f m e s e t m b t h k
w h n t h e s w e s s a y l e a d i n t a c r n l
p r e s s e w s c o n t l d b y h y p e r t c s l t
C e w s t a k t o p e c t d h d t d t r v
t n L o c a l t m t w a p p l i d t l l w n d s
a d i n j r i e s l d i g t h s e d e r s i f c
b p l l d r b l o o d h d e c a p d f m m e m
T h e c a s e s t h i s p m a d p s o p e c e t f t h e
t o t l n u m b e

I C a s e 3 w e t h e c a s e s w h i c h d d t r e s p o d t
r o t e t r a t m e t a l o c l a t e n t i t h g o p

b j c t d t l m b a p n c t e f o m t s t m e
T h e s l o w p u l e d s p u r a t i m a k d c h n g e s i n
t h b l o d p s d d s t r b a s f c n s c u
n e s p i s t d T h l m b a p n c t u e w s p e t e d
w h n t h l w i g o f t h p l e d r p r t r
c u d o r d h r u m o c o m p e r s i s t d I n a l l b t
f t h e c a e t h e f i r s t p n t e w t h d w b l o o d
p a l f i d T h e c a e c n t t u t e d 33 p e c e t f
t h e t o t l u m b

I G r p 4 w e c a s s p e n t g d f n t e i n d a
t s f c e b o c n i l o p e r a t c a s f d
p e s d f c t u f t h e kull m d d l m g a l
h a m r h g s b d r i h a m o r r h a g a d s e t
m p e d b y l m b a p u n t u The c n s t t e d
13 p c t f t h t a l p m b r

T h e t t i m s t a l t y n t h o o c a s w s p e
t

T h t h o c o n l u d s t h a t i f t h e g e g r o
i l l d e l y r t g n e a m t o n u n d p h y s i c a l
e m a t d p e r a t i p o c d e t h r a e
e e p t u t i l t h i n t a l s h c k s o v a n d t h
c l a s s i f y h i s c s o r d i n g t h e i r g n d v m p
t m h e w i l l d e l p o h m s l f a r a t l l u f
t e a t m n t f r e f m m n y o f t h p f a l l s c o m m l
f o u d n t h m a g e m e n t f f c t u r e s o f t h k l l
R o Z o t t u M D

H C C The F e q n e y d S i g n i f i c a t
C e b e l l S y m p t m i n T u m f t h F t a l
L b B H V I f t h e w l k 93 33

T h r u c l e p o t s a t d y o f t h e c o d s o f f i f t y
c a s e s f f r n t a l l b e t u m s e r i f d b y p e a t
t o p v w i t h r g a r d t h e g f i c a l s i g h t d
o f w i d e p d d u s t b a e s o f e b e l l f u n c t
O f t h f o r t y f c a e w h h t e e e o
s y m p t m b o t h f n t i l b e s w e l d i n t w
O f f i s w t h m k d c e b l l a d i t b a e s
a b l a t a l g t h w s f d t p e t t p v
f u r d w g e e t d b y t h c l i n i c a l g a n d
t h f i d g f e t r i c u l g p h y n

T h t h t h t h e o r i n e g d i n g t h e
r r e f c b l l a y m p t m s f o t l l b
l e s d t h a a t m y f t h f t o p o n t b e l l a
p a t h w a y H l d e t h t h e f i d g s f i s
t d y d d p p o t t E l s b g t h e o r y t h t
b l l a y m p t m s c f i f t l l o b e t m c
s t h l t f d t o d e c t i n l m t o f
b o t h f t l l b e b y t h e t m o r d e t t r l e e
w t h t h f r t o n t b e l l a p t h a y s f b o t h
s i d f t h e b n R Z l l r v s M D

P r p e O H P M l i g t H y p e t i n S i m
l t g B r a i n T m P y l r o M J 93
75

M a l g n a t h y p t n t m m i c h l
d n l t h r a c t r i e d b h i g h b l o o d p u

The arterial supply of anterior parasagittal growths is derived from branches of the anterior cerebral artery, the anterior and posterior medial frontal arteries, and the meningeal arteries, while that of growths overlying the parietal and occipital lobes is derived in addition from the parieto-occipital branches of the posterior cerebral artery. A few small branches from the ascending frontal and ascending parietal branches of the middle cerebral artery extend to the capsule of the growth from the pia arachnoid of the tumor bed. Tumors over the hemispheres receive their blood supply mainly from the middle cerebral and meningeal arteries, this being one of the distinguishing features between the 2 types of tumor. The veins are derived from branches of the meningeal and cortical vessels. On account of marked congestion of the veins in and around the tumor and for some distance from it, the number of visible veins is increased. Interruption of the blood stream in the posterior veins which carry blood away from the motor cortex results in weakness of the limbs on the other side of the body. During an operation the primary removal of the central part of the growth allows better exposure of the veins as the remaining shell falls away from the midline.

The symptoms of a parasagittal growth in the Rolandic area are well known—unilateral convulsive seizures recurring over a period of years, loss of power in one or both limbs on the same side, and finally a rise in the intracranial pressure. Tumors in front of the central fissure may cause so few of the characteristic symptoms that a correct diagnosis of the nature and location of the growth may be impossible. A history of intracranial disturbances of many years' duration with ultimate symptoms of increased pressure may indicate a meningeal neoplasm. The triad of headache, vomiting, and papilloedema may not appear until late, and even with a definite increase of the intracranial pressure there may be no swelling of the optic disks. The occurrence of mental disturbances without other symptoms may result in the patients being admitted to a hospital for the insane. Mild psychic disturbances have been classified as psychoneuroses or hysterias until changes in the fundi led to a correct diagnosis. Cerebellar symptoms have been seen when the growth caused pressure on both frontal lobes. Speech disturbances may be the result of interference with the vascular supply of the centers concerned, even without direct pressure on the areas supposed to contain the speech centers.

Calcification in a part of the tumor may be visible in the roentgenograms and suggest a meningeal growth. A cranial hyperostosis near the midline of the vertex or erosion of the inner table or of both tables of the skull is significant. Marked unilateral enlargement of the diploic channels in the bone on the same side as the suspected neoplasm increases the probability of a meningeal growth. Pneumograms have not helped in differentiating meningeal and subcortical growths. F S PLATT, M D

SPINAL CORD AND ITS COVERINGS

Orton, S T, and Bender, L. Lesions in the Lateral Horns of the Spinal Cord in Acrodynia, Pellagra, and Pernicious Anæmia. *Bull Neurol Inst, New York*, 1931, 1, 506

The authors made a histological examination of the central nervous system in a case of acrodynia, a case of pellagra, and five cases of pernicious anæmia. They found severe lesions in the lateral horns at the lumbar and thoracic levels of the spinal cord and analogous areas at other levels. These lesions were of a chronic type and characterized by loss of nerve cells and nerve fibers and by fibrous replacement. The authors conclude that since the lateral horn region contains the cell bodies of the effector neurones which connect the spinal cord with the sympathetic nervous system, lesions in this focus may be related to the disturbances of vasomotor and splanchnic control which are common to the diseases under consideration.

ROBERT ZOLLINGER, M D

SYMPATHETIC NERVES

Lobenhoffer. Resection of the Splanchnics in Gastric Crises (Splanchnicusdurchschneidung bei gastrischen Krisen). *Deutsche Ztschr f Chir*, 1931, CCXXXI, 492

Resection of the splanchnics is advised for the relief of severe painful crises in the abdominal cavity which are not due to organic disease. After reviewing the meager literature on the subject to date, the author briefly describes the possible routes of approach to the nerves. There is a supradiaphragmatic and a subdiaphragmatic approach. Lobenhoffer prefers the latter. After severing the gastrocolic omentum he penetrates to the right as far as the adrenal gland. There he ligates several small veins and severs the main splanchnic branches. On the left he retracts the pancreas upward and severs two larger nerve fibers. In both of his cases prompt relief was obtained. In the second case the resection was done only on the right side. After the operation no changes were noted in the abdominal organs. The patients felt well. The use of the subdiaphragmatic route has the advantage that it permits examination of the abdominal organs.

VORSCHUETZ (Z)

Gucci, G. Sympathicolumbar Ganglionectomy (La gangliectomia simpatica lombare). *Polclin*, Rome, 1931, LVIII, sez. chir., 482

Gucci reports experiments on dogs in which the second, third, and fourth lumbar sympathetic ganglia were resected. The one constant result was an increase in the blood pressure in the limb of the side operated upon which was due to vasodilatation. This lasted for about a week, the pressure then returning to its former level. Whereas in clinical cases a favorable influence of the operation on the healing of ulcers has been noted, in these experi-

th t u l d turbanc s \ ray t atment may
be t red f t H emph is s that th techn qu f
ap l c a t o n of s t r e t m e n t s i m p o t a t l l e b e
l e t h t f a l u t o p p l y t h e t r e a t m e n t p p l y
m x p l i n s o m e f t h n e g t e u l t b t d
l n c e s w t h a c m e g l y n d d e f i v s u a l d i s
t b a c t h c h e f c o c e t h p r e s r v t n r
t r a t i o n f s i n n d i t a n c e q u e t n f
j u d g m e t h t e t o p o e d t t p e r a t n
t o r t p r m l y t o \ r a y t r e t m n t l f s n
b u t l g h t l a f f c t d \ r a v t a t m n t s m i q u e
j u t f b l y b t d b u t f i n s n l m s t l o s t u m m e
d t e u g e r y p p a r s t b e t h p e d u r o f c h o i c e
W t h r g d t u p e l l a s t s d e d l m
R a i k h s p c h t h u t h r a v t h a t t h e r
e v d e n c a t p r t t h a t s c h e y t e s p o d t o \ r a y
t e a t m n t T h e r f e p e a t v t c k s t h e n l y
m e t h d f i d a l g t h e m

\ r a y t m n t h a s p r d u n a l g a l i
c h e c k g t h e l s s f s o n l t n g f o m g l m a t
a f f t g t h o p t i c n r v e a d c h a s m B c a u e o f
t h e l w g t h t f t h t m r d t h e f a c t t h a t
t h e a l d e t m y b d t c o m p s n r a t h
t h n d t t o o f t h e n e r v e f b e r i a e o f t h
t m f m t s u d g s h e a t h b y n e s h i z i
i s g g s t d T h e t a t m n t f g l h m a t r g
f m t h s f n d b u l m t a t p e n t a t u s t c y
b u t w i l l d o b t l b i m p o v d b y e l i e d a g n e
a d m e o m p l t r p o t s o f t h t e t m e t o f l
s o n s b o u t t h e h a m w t h p t u l a f e c t o
t h p a t h l o v y

A c s d t i f s p r a l l a a d p s i l r
e u s m e o g t n s o f w h c h b e f r p a t
d e p e d s n a c c t e l t k n h t r y m e t h a
p n n y p e f i l a f i n d i n g l e a d t t h e
l s n t h t f r t h e p s e t t h e r t m t t
b r e g a d e d n s g c a l
C h r n i h m l a f h d i t a p p t o b
m e m m t h l g e r l l v b n a s u m d
T h e r e s u l t f t t m t b s g c a l m s
h a b e m k a b l y g a t i n g

T h u t h u g p h t l l g s t t f m l a z
t h e m l w t h t h p r h s m l l e n s b c a
t h l l y t h t r s t t s e t h

H A L A H M D

E l b e g C A T l P r a g i t t I M f g I F i b
b l f m t B H \ l f t \ l k 93
i 3 9

T h e n t r l g t h f m l l l d d l
e d o t h e l m a t s o l d p l a m h h e
u u l y a t t h d t o t h d a c a p s l e d a d l l
d f n d r m t h e u o d n g t u w h h t h p h
a d b d n t p e e t r t h y a c r e a e l l y
s i z e n d d t b m e c y l l i t f i t h r
h a r g t h g s a c h c t r i t c s m m i t
s o o n b c a m e d n t h t h v e o t h t o l g e l l
o f t h e s a m e t p e T h e w d e s g i d
m e n i n g o m a t I t s e t m t e d t h i p o p c e n t
o f t h m r e f b o l a t m t

T e c h c a l d i f f i c u l t i e n u t r d d r g a t
t e m p t t o m o e t h g o w t h r d u t t h

s i t u a t o s i z e c o n t y b l o o d s u p p l a d
c o n n e c t i n s w t h t h d a t h e m c a d c o n a t y
a n d v e n u s c u g s t n o f t h s c a l p a d b o n a n d
t h c i a t d c h a n g e n t h c r a s l b o u e s B
c a u e f t h f a i l e f p h s c a s t o d i a g a t

r l y s h h t d s t b a n e a n d t h r u u f m a d
q u a t m e t h d s o f e a m t i n a d b i s e f t h
g a t p o w e o f c o m m d a t i o n t h b r i
t u m o r a f t n o f c o n s d b l e s i z e b y t h e t
t h e y c m t o p e t n t f q e n t l y g h n g
b t w e e n r o n d o o g m T h i t p o o l c a p
s u l t d t y p o f g t h l e s d f f i c u l t t o e m o e
t h a n t h h d e l l e c a p u l a t d t p b e c a u e t i s
p o s s i b l e t o o b t b e t t e r r e t a c t s n w t h u t r y
t t h e v e s s l s t h e u d e l y g p r a h o d
T h e t r a u m a r s u l t g f i o m t i m p t t r e m e t h e
h a d t y p e f g t h i q e n t l y s u l t n s e c o d a r
s o f t e n n g o f t h b r a n t u W h e t h a t t a h m n t
f m e n g e l g w t h t o t h e d a s c s s i b l e t s
a l y e x p o a n d p r a t i o n m a y d e t r m n t
s c c f t h p r t u c e w t h t t h u c t r o l
f t h v s u l s a p p l y t h e b l e d g i s c r t n t o b e
g t A l t h g h t h e t u m r s i s l f r e q u e n t l y d o e s
t n t a i n m n y b l o d v s b t h e v s c a l a r i t y o f
d j a t t i s u s g e a t l y r e a d s o m e t i m s t
s u c h n e t e t t h a t z o s p e r a t n
n e c s r y f o c o m p l e t m a l f t h g r w t h b e
c u e o f t h d f i t l y i n c o n t r l l g t h b l e e d i n g

T h t r m i a g t t l m e n g l n b r b l a s
t o m a t s r v d f t m r s w h c h a e p m a r l
a t t c h d t t h e d t o r r t h e s u n s r f l s
T u m r n g t i g f s t h e r a w a y f m t h e s u
m y c m t l n g a n t t h e u b u t h
t e h n l p r b l m s f t h e s m a l a d f t
b c a u f t h d i f f c i t h e r l a i n t t h
b l d e s l s n d t h e T h e r a b e t t e r
c l s f i d s g o w t h t h e e r b r a l n s i t u e s

M o s t f t h p a r s a g t t l t u m o a e u n i t l
b u t s o m e t m e x t c t h e s c r s
p t l a l y a e f p s a g t t l g w t h e
t h t r p t i t h f r t l l b e s a d c a s e l
c r s f t m p l t e m l f p a g t l l
g t h i n h h t h d r w a s t l s e d a t t h f i r s t
p e t o O f s r s o f 7 6 7 o p t i l y r m d
n d e r i f d t m r f t h e b r a 3 p r c e t e
m n n g e l f i b b l s t m t O f t h e t m
a b t f u t h p a r a s a g t t l g w t h t h
p s a g t t l g t h a d g r t h s e t h c
i f t h b l h m i s p h e r t g t h c
t t t d t h f i f t h f t h m e g l h b b l t o
m a t

I r a s a g t t l t m c u m o f t a n t r r
t h a p o t t t h l d e I t h l o c a t n
t h e u p r i l g t d l l s r a n d t h
p r d i l l x p h s n b o d d s
t r n g t h u f e a d m a l l e t h n
b h d t h c t l f e

T h d u l t t h m t r b l s o t h e
l t f t h t u m o t t h e l g t d a l s u
A r u l e t h t t h m t t t h d g e f a p c h n
b o d t t h e e f t s i t l t b

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Morgen, M Tuberculosis of the Breast *Surg, Gynec & Obst*, 1931, lxxi, 593

While relatively rare when compared with tuberculosis in other organs of the body, tuberculosis of the breast is not uncommon among diseases of the breast. In the author's opinion the occurrence of primary tuberculosis of the breast has not been proved, as there is no record of a case in which tuberculosis was found limited to the breast at autopsy.

The possible paths of infection are (1) the ducts, (2) a surface wound, (3) the blood stream, (4) the lymphatics, and (5) the contiguity of structures. The first possibility is considered quite remote. Accidental infection through a surface wound is possible since Ravenel has shown that the organism is able to pass through the skin or mucosa without leaving any sign of invasion. Against the likelihood of the blood stream's being the pathway of infection, the author points out that in 1925, Nagaskima reported thirty-four cases of primary tuberculosis coming to autopsy in which all suspicious breasts were sectioned but failed to show evidence of a tuberculous lesion. It has been generally believed that most cases of mammary tuberculosis are the result of retrograde lymphatic involvement from the axilla or some intrathoracic focus. This theory is supported by a number of cases in which the involvement of the axillary nodes seemed definitely to precede the breast involvement and by the intimate relationship of the mammary gland to the axillary and mediastinal lymph nodes. Infection through the contiguity of tissues is readily understood.

Most cases of tuberculosis of the breast are of the bovine type. Trauma and heredity play a very minor part. The lesion is most frequent during the period of sexual activity, and the right breast is involved more often than the left.

The first sign noted by the patient is a small lump in the breast. This precedes pain or discomfort by a considerable time. The disseminated or nodular type is characterized by extreme chronicity, absence of pain, and an insidious development. The confluent type has a more rapid course than the nodular type and is more often seen in the lactating breast. Later, the skin over the mass becomes tense and reddened and severe pain begins because of the distention of underlying tissues. The area soon breaks down and a fistula results, through which a thick cheesy pus is discharged. Retraction of the nipple is rare. It occurs only in cases in which the process is of long duration and low virulence. Homolateral axillary adenopathy is one of the most frequent signs of mammary tuberculosis and may be noted long before the breast lesion.

The prognosis is good when surgical treatment is given early.

ANTHONY F SILVA, M D

Liedberg, N Cystic Disease of the Breast (Ueber Mastopathia cystica) *Acta chirurg Scand*, 1931, lxxviii, 369

The author reviews sixty-two cases of cystic disease of the breast which were treated in the surgical clinic at Lund in the period from 1900 to October, 1930. As a bilateral operation was done in four cases, sixty-six specimens were examined microscopically.

Microscopic examination of the tissue removed at the primary operation showed a definitely benign process in 68 per cent of the specimens, so-called precancerous proliferation in 18 per cent, and obvious cancerous degeneration in 14 per cent.

Bleeding was a symptom in eighteen (nearly 30 per cent) of the sixty-two cases. In two, it occurred from both breasts.

In the clearly benign cases the incidence of hemorrhage from the breast was 25 per cent and in the precancerous and cancerous cases it was only slightly higher, viz, 33 per cent.

Of twenty-nine patients whose condition was diagnosed as benign on microscopic examination and who were treated only by the local excision of a tumor, three (10 per cent) developed a cancer. Ten of these patients were under observation for more than six years.

Of eleven patients with cystic disease accompanied by bleeding, who were treated by limited excision, only two developed a cancer of the breast.

In the author's opinion the findings of the follow-up examinations indicate that in cases of cystic disease of the breast with a fairly circumscribed tumor formation and the microscopic appearance of an undoubtedly benign process, the operative treatment should be conservative.

Mason, J T, and Rose, H W Carcinoma of the Breast Removed with the Actual Cautery *West J Surg, Obst & Gynec*, 1931, lxxix, 821

The authors first discuss the use of the cautery in surgery, and then consider the vulnerability of cancer cells to heat. Since 1926 the actual cautery has been used in their hospital in all cases of breast cancer. The usual type of radical mastectomy, including removal of the upper portion of the rectus sheath, is performed. The skin is held taut by towel clips with traction applied on either side along the line of incision. The skin incision down to the muscle is made with the cautery at white heat (2,800 degrees F). This temperature is used also for dividing the nerves. The skin flaps are dissected up with a cherry-red cautery (1,800 degrees F). This is used

ments which were prepared. The author
 explains the difference by assuming that in the
 clinical cases the ulcers were due to disordered sym-
 pathetic innervation whereas in the perime-
 tral ulcers this was not the case. Cessation of pain
 followed the operation.
 METLICK AUDREY GOUGH M.D.

MISCELLANEOUS

CANNON W.B. Recent Studies in Chemical Med-
 ication of Nervous Impulses. *Lancet* 1933
 473

The author reviews the evidence that peculiar
 subthreshold activities arise from the effectors
 innervated by the sympathetic and parasympathetic
 fibers of the autonomic nervous system and that
 these subthreshold activities are capable of influencing the
 response similarly to the stimulus in the same way as
 nerve impulses. While the present position of the
 question of circulatory modulation of unduly
 distributed sympathetic impulses would still be
 debatable, the author discusses the possibility of the
 effect of stimulus intensity on the sympathetic

system. The author points out that finally obtained
 experimental preparations in which the heart
 denervated the adrenal glands were excluded
 from action of the sympathetic nervous system in the
 mid-thoracic region. Stimulation of the sympathetic
 fibers of the smooth muscle of the trachea in the
 preparation caused a slow increase in the blood
 pressure of the heart rate. Checking the blood flow
 from the peritumulated caused delay in the
 effect until the flow was restored. When the
 cumulative effect of a stimulated sympathetic call was
 excluded the application of the same stimulus had
 effect. Because this subthreshold activity is obtained from
 smooth muscle which they are acted on by sym-
 pathetic impulses, the author suggests that it be
 called sympathon.

Evidence cited shows that adrenalectomy and
 sympathetic amputation of the thoracic and abdominal
 sympathetic act on the body's functions. At
 least the thoracic is able to state whether the
 humoral substance is a secret of the nerve
 terminals, activating the blood vessels at the level
 itself which mediates the action of the nervous
 impulses. The peculiar mechanism in the secretory
 IL 22 4 IL 2 M.D.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Morgen, M. Tuberculosis of the Breast *Surg, Gynec & Obst*, 1931, lxxi, 593

While relatively rare when compared with tuberculosis in other organs of the body, tuberculosis of the breast is not uncommon among diseases of the breast. In the author's opinion the occurrence of primary tuberculosis of the breast has not been proved, as there is no record of a case in which tuberculosis was found limited to the breast at autopsy.

The possible paths of infection are (1) the ducts, (2) a surface wound, (3) the blood stream, (4) the lymphatics, and (5) the contiguity of structures. The first possibility is considered quite remote. Accidental infection through a surface wound is possible since Ravenel has shown that the organism is able to pass through the skin or mucosa without leaving any sign of invasion. Against the likelihood of the blood stream's being the pathway of infection, the author points out that in 1925, Nagaskima reported thirty-four cases of primary tuberculosis coming to autopsy in which all suspicious breasts were sectioned but failed to show evidence of a tuberculous lesion. It has been generally believed that most cases of mammary tuberculosis are the result of retrograde lymphatic involvement from the axilla or some intrathoracic focus. This theory is supported by a number of cases in which the involvement of the axillary nodes seemed definitely to precede the breast involvement and by the intimate relationship of the mammary gland to the axillary and mediastinal lymph nodes. Infection through the contiguity of tissues is readily understood.

Most cases of tuberculosis of the breast are of the bovine type. Trauma and heredity play a very minor part. The lesion is most frequent during the period of sexual activity, and the right breast is involved more often than the left.

The first sign noted by the patient is a small lump in the breast. This precedes pain or discomfort by a considerable time. The disseminated or nodular type is characterized by extreme chronicity, absence of pain, and an insidious development. The confluent type has a more rapid course than the nodular type and is more often seen in the lactating breast. Later, the skin over the mass becomes tense and reddened and severe pain begins because of the distention of underlying tissues. The area soon breaks down and a fistula results, through which a thick cheesy pus is discharged. Retraction of the nipple is rare. It occurs only in cases in which the process is of long duration and low virulence. Homolateral axillary adenopathy is one of the most frequent signs of mammary tuberculosis and may be noted long before the breast lesion.

The prognosis is good when surgical treatment is given early.

ANTHONY F. SAVA, M.D.

Liedberg, N. Cystic Disease of the Breast (Ueber Mastopathia cystica) *Acta chirurg Scand*, 1931, lxxviii, 369

The author reviews sixty-two cases of cystic disease of the breast which were treated in the surgical clinic at Lund in the period from 1900 to October, 1930. As a bilateral operation was done in four cases, sixty-six specimens were examined microscopically.

Microscopic examination of the tissue removed at the primary operation showed a definitely benign process in 68 per cent of the specimens, so called precancerous proliferation in 18 per cent, and obvious cancerous degeneration in 14 per cent.

Bleeding was a symptom in eighteen (nearly 30 per cent) of the sixty-two cases. In two, it occurred from both breasts.

In the clearly benign cases the incidence of hemorrhage from the breast was 25 per cent, and in the precancerous and cancerous cases it was only slightly higher, viz., 33 per cent.

Of twenty-nine patients whose condition was diagnosed as benign on microscopic examination and who were treated only by the local excision of a tumor, three (10 per cent) developed a cancer. Ten of these patients were under observation for more than six years.

Of eleven patients with cystic disease accompanied by bleeding, who were treated by limited excision, only two developed a cancer of the breast.

In the author's opinion the findings of the follow-up examinations indicate that in cases of cystic disease of the breast with a fairly circumscribed tumor formation and the microscopic appearance of an undoubtedly benign process, the operative treatment should be conservative.

Mason, J. T., and Rose, H. W. Carcinoma of the Breast Removed with the Actual Cautery. *West J Surg, Obst & Gynec*, 1931, xxxiv, 821

The authors first discuss the use of the cautery in surgery, and then consider the vulnerability of cancer cells to heat. Since 1926 the actual cautery has been used in their hospital in all cases of breast cancer. The usual type of radical mastectomy, including removal of the upper portion of the rectus sheath, is performed. The skin is held taut by towel clips with traction applied on either side along the line of incision. The skin incision down to the muscle is made with the cautery at white heat (2,800 degrees F). This temperature is used also for dividing the nerves. The skin flaps are dissected up with a cherry-red cautery (1,800 degrees F). This is used

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TRACHEA LUNGS AND PLEURA

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In apicolysis, resection of a certain amount of the second rib facilitates the later stages and favors complete detachment. It is possible to liberate the pleural dome completely from its connections without penetrating the supraclavicular zone and without meeting any fibrous formation which must be removed or sectioned. In the living, a rough dissection with the tampon would certainly be of value, and the oozing into the surrounding fascia would rapidly yield to tamponing with compresses saturated with warm salt solution. The anatomical difficulties of apicolysis are then easily surmounted. The surgical difficulties due to the thinness and friability of the pleura have been discussed by Berard

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Brock, R. C., and Blair, E. A. The Importance of the Respiratory Movements in the Formation and Absorption of Pleural Fluids. *J Thoracic Surg*, 1931, 1, 50

Brock and Blair describe in detail an apparatus which allows direct observations on a heart-lung preparation freshly removed from a dog, hooked up with an artificial circulation, placed in a glass "thorax," and made to "breathe" by a respiratory pump. By means of this set-up the exudate from each lung can be separately observed and collected for a period of several hours.

Under direct visualization, fluid can be seen to drip from an oedematous lung. It is suggested that the rise in negative pressure during the act of inspiration fills the subpleural lymphatics, and that when expiration follows, the filled lymphatics empty part of their contents into the pleural space. An oedematous condition of the lung was produced by (1) pouring acidified fluid into the bronchi, (2) inducing passive congestion, and (3) causing an active inflammatory process with dilute chlorine gas.

It was discovered that in a living preparation the formation of a pleural effusion is dependent upon the respiratory movements, a finding which corroborates the conclusions previously drawn by Graham from experiments with dead lungs in an artificial thorax.

In the living intact animal, after an oedematous condition of the lung had been produced by either the acidified fluid method or the chlorine method, fluid could be collected by means of a cannula inserted into the pleural space. The rate of formation of this fluid was shown to be dependent upon the force of the respiratory movements and the associated pressure changes. A quiet, easy respiration produced a small effusion, whereas deep, labored breathing caused a much more rapid accumulation.

In addition to fluid of an inflammatory nature passing from the lung to the pleural space, the authors found that ordinary Ringer's solution, if introduced into the bronchi and alveoli, will be made to pass into the pleural cavity by the respiratory movements. When part of a broth culture of streptococcus was added to Ringer's solution and introduced into the lung, the organisms passed through

the pleura with the fluid almost immediately and without the aid of cellular activity. It is suggested that this may be an important mode of infection in the body and may explain certain septicæmias of obscure origin.

Just as the rate of formation of fluid by the inflammatory lung was influenced by the character of the respiratory movements, so also was the rate of absorption of fluid by the non-inflammatory lung. With quiet, easy respiration the absorption was slow, with deep, labored breathing it was much more rapid.

J. DANIEL WILLEMS, M.D.

Head, J. R. Empyema with Bronchial Fistula Simulating Lung Abscess and Bronchiectasis. *Surg, Gynec & Obst*, 1931, 111, 691

The clinical manifestations of empyema with bronchial fistula are so different from those of uncomplicated empyema that the former condition is often mistaken for disease of the lung and bronchi. Acute cases of empyema with bronchial fistula simulate lung abscess, while chronic cases simulate bronchiectasis. The most common cause of empyema with bronchial fistula is the rupture of a tuberculous cavity into the pleura. Other causes are lung abscess and gangrene, the sloughing of a superficial pulmonary infarct, the spontaneous rupture of an empyema, pulmonary cancer, hydatids of the lung, bronchiectasis, and bronchial foreign body.

In acute cases of cough, copious sputum, and fever, it may be difficult, even with the aid of roentgenograms, to distinguish encapsulated pyopneumothorax from parenchymal abscess. Chronic cases of empyema with bronchial fistula have emptying spells of marked expectation with a change in position similar to cases of bronchiectasis. However, small and loculated empyemata in which the fluid level is obscured by a thickened pleura may be confused with the type of bronchiectasis in which there is parenchymal fibrosis or atelectasis or the main bronchus is so constricted that the lung becomes drowned with secretions. A carefully taken history, physical examination, and roentgenograms made in at least two planes in the upright position before and after the injection of iodized oil are essential for the diagnosis. Diagnostic aspiration should not be performed for if a lung abscess is present there is risk of infecting the pleura and causing empyema.

As the treatment of the various possible conditions is so different, a correct diagnosis is important. Lung abscess calls for expectant treatment with salvarsan and postural drainage and possibly later thoracotomy. Bronchiectasis is treated by vaccines, lipiodol injections, postural drainage, and perhaps phrenicectomy. The treatment indicated for empyema with bronchial fistula is drainage by rib resection. In acute cases, the fistula and cavity will usually close spontaneously following drainage, but if they do not, secondary operations are required.

The author reports four cases in which the diagnosis was uncertain and difficult.

MAURICE MILES, M.D.

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patient seems to get along better also if he can swallow his saliva or is fed his saliva through the gastrostomy tube

When surgical interference is indicated the author prefers the abdominal approach. He believes, however, that the thoracic approach should not be entirely discarded. A new opening may be made between the œsophagus and the stomach or both the stomach and œsophagus may be incised in the manner of the Finney pyloroplasty. No special after-treatment seems necessary.

The author urges more thoughtful consideration of the possibility of relief by operation in carcinoma of the œsophagus.

His technique for surgery of the lower end of the œsophagus is described in detail and shown in illustrations
EARL O. LATIMER, M.D.

Alpin, J. Collar Mediastinotomy in Complicated Foreign Body in the Œsophagus (Zur Frage der collaren Mediastinotomie bei komplizierten Oesophagusfremdkörpern) *Ztschr. f. Hals-, Nasen-, u. Ohrenheilk.*, 1931, LXXIII, 293

In twenty-nine cases of foreign body incarcerated in the œsophagus the author was compelled to do a collar mediastinotomy three times. Surgical intervention is absolutely necessary in abscess in the œsophageal wall, localized pericœsophageal abscesses, and diffuse phlegmon with suppurative mediastinitis. These complications may develop when the foreign body is retained, after it has been successfully removed, and even after it has been passed spontaneously.

Following a discussion of the essential symptoms of complicated œsophageal foreign body and its diagnosis by means of the X-ray and œsophagoscopy, the author reports the three cases in which he performed a collar mediastinotomy.

The first case was that of a patient who swallowed a bone and had been subjected to various attempts to force it down by blind methods. When the author was consulted the bone has been stuck in the œsophagus for three days. Roentgen examination revealed partial retention of the contrast medium at the level of the seventh cervical vertebra. The œsophagoscope disclosed a rupture of the left œsophageal wall and a bone with sharp, pointed edges, embedded vertically at a depth of 19 cm. Extraction was extremely difficult and was effected only after repeated attempts. Immediate mediastinotomy was advised because of the perforation, but the patient refused it. At first there was some improvement, but later definite evidence of an acute phlegmonous pericœsophagitis and mediastinitis developed. Finally, the patient consented to the operation. A bilateral collar mediastinotomy was done by Hacker's method. Death occurred twenty-four hours later from increasing cardiac weakness.

In the second case the patient swallowed a goose bone. The bone lay in the œsophagus for six days at the level of the sixth cervical vertebra. Attempts at extraction had not been made. The author removed

it by œsophagoscopy under local anæsthesia with the aid of a distensible tube by Seiffert's method. On the left œsophageal wall there was a decubital ulcer from which malodorous pus escaped in a considerable quantity when pressure was applied upon an infiltration in the neck. The pus was found to come from a pericœsophageal abscess. On the following day a bilateral mediastinotomy performed by Hacker's method released a large amount of pus which yielded streptococci. The patient made a good recovery and was discharged well after ten weeks in the hospital.

The third case was that of a patient who believed he had swallowed a bone and came at once for treatment. Roentgen examination revealed a shadow at the level of the sixth cervical vertebra. On the following day œsophagoscopy was done under local anæsthesia in both the sitting and lying positions, but revealed no foreign body. The patient was very excited and restless. After three hours, emphysema of the neck and fever developed. By evening, the emphysema had extended and the temperature had risen to 39.2 degrees C. To prevent mediastinitis a bilateral mediastinotomy was done. A perforation made by the œsophagoscope was found in the upper cervical portion of the œsophagus. A stomach tube was introduced and bilateral iodoform tamponade of the upper mediastinum and the pericœsophageal space was done. The patient's condition improved except for paralysis of the right vocal cord. When he was discharged at the end of two months his voice was hoarse, but he was cured otherwise.

The author requests that analogous cases and all cases of mediastinotomy by Hacker's method or by Marschuk's modification be reported. ZIPPER (Z).

Gatellier, J. Acute Mediastinal Emphysema (L'emphyseme mediastinal aigu) *Arch. med.-chir. de l'appar. respir.*, 1931, VI, 210

Acute mediastinal emphysema occurs as a complication of chest wounds from projectiles of war, but is seen also in civil surgical and medical practice. In the author's first case, that of a man wounded in the chest, the extension of the condition was so rapid that early operation failed to save the patient's life.

Among 261 cases of penetrating wounds of the chest the author observed only 7 cases of acute mediastinal emphysema. The 2 early symptoms are dyspnoea and circulatory disturbance with cyanosis. It is the veins that offer the least resistance to the gaseous compression. The pulse is small and frequent, and there are irregularities in the cardiac rhythm. According to Sauerbruch, the heart sometimes stops before the respiration.

In exploring the substernal fossa the finger depresses a sort of elastic cushion which seems to compress before it the cutaneous and superficial layers. The subcutaneous crepitant bulla is not perceived by palpation until a later stage. Of great importance in the diagnosis are phrenic pain, disappearance of precordial dullness, and the findings of roentgenoscopy.

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SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Obadalek, W Early Operation in Pneumococcic Peritonitis in Children (Die Frühoperation der Pneumokokkenperitonitis im Kindesalter) *Zentralbl f Chir*, 1931, p 1250

Since 1920 the author has seen fifty cases of pneumococcic peritonitis at his clinic in Bruenn. Of the fifty patients, forty-seven were operated upon immediately. The three others were not operated upon because in one case the parents refused to allow operation, in another, the patient was admitted to the hospital in a dying condition, and in the third, the patient was too weak from an illness which had lasted three months and was complicated by chronic sepsis, thrombosis of both iliac veins, and umbilical fistula. Of the forty-seven patients, thirty-seven were cured and ten died in spite of the operation. Of ten patients with localized abdominal empyema, only one died. Of thirty-seven patients with diffuse peritonitis (24 per cent) died and twenty-eight were discharged cured.

Although statistics show that the mortality of pneumococcic peritonitis decreases with the duration of the disease, the author could not decide to give up early operation. It is almost impossible to foretell whether the peritonitis will become localized or not. Furthermore, even in the third stage that of localized abdominal empyema, sudden diffusion of the infection may occur at any time, and if it should attack some vital organ it would then be too late to interfere. The danger of conservatism in pneumococcic peritonitis lies in the fact that early diagnosis is by no means always certain. In several cases the diagnosis was wrong, peritonitis of appendiceal origin or a combination of pneumococcic peritonitis and appendicitis being discovered.

The operation consisted of bilateral incision and drainage and if possible removal of the appendix. It should be performed quickly and should not require more than twenty minutes.

Of the deaths in the cases operated upon early, two occurred in hopeless cases (with acute yellow atrophy of the liver and pneumococcic meningitis before operation), two in cases of peritoneal pneumococcic sepsis, and three in cases with bowel paralysis before the operation. Of the last three two were due to metastasis (meningitis and pericarditis).

1 ROSENBERG (Z)

GASTRO-INTESTINAL TRACT

Marez, W C Problems of Present-Day Gastro-Enterology *Am J Med Sc*, 1931 clxxxiv 441

While there are many theories as to why peristaltic waves tend to travel aborally, the most

probable explanation is that the upper part of the gastro-intestinal tract is more active, more irritable, and more responsive to stimulation than the lower part. This theory is supported by the fact that peristalsis has been reversed experimentally by causing irritation of the lower end of the bowel. The gradient of irritability down the bowel is commonly reversed in pregnancy as the result of increased metabolic activity in all tissues in the region of the growing uterus. The introduction of an irritant, even water, into the rectum may reverse the gradient and cause vomiting.

There is still much that is not understood about the nerves of the gastro-intestinal tract. Often when the bowel is quiet it is not paralyzed by toxins but inhibited by nervous action. In certain cases of dynamic ileus spinal anesthesia removes the nervous inhibition and causes bowel activity.

Symptoms of indigestion are produced by motor dysfunction rather than by disturbances of secretion. Our knowledge concerning gastric secretion, and especially the concentration of pepsin in various diseases, still remains elementary. Gases which form in the bowel are normally absorbed by the blood and excreted by the lungs, and flatulence may be due to the swallowing of air rather than to the formation of gases in the bowel.

It is now known that mental and emotional disturbances can either delay or stimulate the movements of the bowel and interfere with the production of gastric and intestinal secretions. Constipation may produce stagnation of foul material in the colon resulting in pain and flatulence. Many disturbances of digestion accompanied by headache, insomnia, and nervousness appear to be due to constitutional inadequacy. This defect is often congenital or hereditary. While migraine has many gastro-intestinal symptoms, the cause is probably located in the cerebrum and it is questionable whether dieting will relieve the condition.

The cause of constipation is still not clear. In many cases cure is impossible. Eventually, the neurological surgeon may devise an operative technique which will be of aid in severe cases. Enemas of warm normal salt solution are often very helpful. This solution will not irritate the mucous membrane of the colon or produce permanent injury. It is superior to either plain water or a soapsuds solution.

In many cases of diarrhoea, a definite diagnosis is impossible as the stools, the roentgenograms of the colon, and the mucous membrane may appear normal. In such cases there may be a disorder of the absorbing mechanism of the colon and water may be returning from the blood into the sigmoid and rectum.

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P l x (Z)

Comfort, M W, and Osterberg, A E Gastric Secretion After Stimulation with Histamin in the Presence of Various Types of Gastric and Duodenal Lesions *J Am Med Ass*, 1931, xcvi, 1141

Histamin is of value in distinguishing true from false achylia. However, it failed to cause a secretion of free acid in one case in which the Ewald meal caused such secretion, it produced secretion of free hydrochloric acid of a concentration less than that evoked by the Ewald meal in two cases, and it produced concentration only equal to, or within ten points of, that evoked by the Ewald stimulus in fourteen cases.

The histamin test may distinguish the more serious forms of secretory disturbance from those of a transitory nature, but it does not always give conclusive information as to the underlying anatomical lesion of the prognosis. Henning cited cases in which repeated gastric analysis with caffeine test meals gave evidence of normal gastric secretion when secretion had not followed the previous administration of histamin. It appears that histamin does not always evoke a maximal or constant response.

It is not apparent that the response of gastric secretion to histamin is of greater value than the response to the Ewald meal in the differential diagnosis of peptic ulcer and gastric carcinoma. In cases in which reduced concentration of free acid and reduced volume have a diagnostic significance, as in gastric carcinoma, the Ewald meal gives information which compares favorably with that obtained after the use of histamin. Moreover, Comfort and Osterberg have encountered cases of gastric carcinoma in which the concentration of free acid and the volume were almost as great as in cases of duodenal ulcer.

So far as the volume of gastric secretion is concerned, there appears to be a significant correlation between volume and free acidity. On the other hand, the volume of secretion as aspirated varies widely in all types of lesions studied. Its diagnostic significance is of such limited value and the possible errors in estimation are so great that it does not seem to add much information of diagnostic value.

There is such a high correlation between the highest concentration of total chloride and free acid following stimulation by histamin that determinations of total chloride following the administration of histamin offer little extra information concerning this secretory activity of the stomach and do not add sufficiently to the practical value of the use of histamin as a test of secretory capacity to warrant the estimation of concentration of chloride.

The advantages of the stimulus of histamin over the Ewald meal are not great enough to warrant the adoption of the fractional method with stimulation by histamin as a routine procedure.

The value of histamin in the study of chemical values after resection of the stomach or gastroenterostomy lies in disclosing free acidity masked by the neutralizing influence of the base in the regurgitated duodenal or jejunal juice. Additional

evidence of the unimportance of the humoral or hormonal influence of the antral portion of the stomach in maintaining the secretory capacity of the stomach as well as the high incidence of free acidity in the resected stomach is mentioned briefly.

Neugebauer, F. The Question of Gastritis (Die Gastritisfrage) *Beitr z kl n Chir*, 1931, cli, 514 581

The cause of gastritis is sometimes to be sought in exogenic irritants, but more often in endogenic irritants (toxins of the blood or products of protein decomposition). The gastritis may heal after disappearance of the cause, but occasionally it persists, recurring chronically through the patient's life. Because of the great variation in the symptoms the diagnosis is not easy. The condition may be completely asymptomatic, but as a rule there are symptoms suggesting dyspepsia, a nervous disturbance, or ulcer. A positive diagnosis can be made only with the microscope (possibly from epithelial shreds in siphoned gastric contents). Roentgenographic and gastroscopic examinations may mislead. However, recognition of the disease is possible from fluoroscopic findings, a carefully taken history, the presence of leucocytes in the gastric contents, and the intermittent appearance of blood in the stools. The author supports the view of Konjetzny, which is constantly becoming more generally accepted, that gastritis is the usual origin of the ulcer and is probably the origin also of carcinoma. If medical treatment fails, surgical intervention, consisting only of extensive resection, is indicated. Thirteen histories in detail conclude the article.

In the discussion of this report, STERNBERG stated that atrophy of the mucosa cannot be designated atrophic gastritis if no signs of inflammation are present and is not the result of inflammation. He expressed doubt as to whether it represents the cause or the effect of carcinoma. He stated that the conception of gastritis must be more sharply defined from the clinical and anatomical standpoints.

WINKELBAUER stated that the role played by the musculature as the result of a disturbance of the nerves must not be underestimated. This is evident from experiments on animals. Conservatism in the use of resection is advisable because of the all too numerous failures of even experienced surgeons.

On the bases of 312 cases, MAHLER recommended gastroscopy for diagnosis. He stated that gastrotonography according to the method of Weitz, which was carried out 150 times, often revealed a tonus curve markedly different from the normal and very lively. On critical consideration it must be admitted that the danger of an operation is greater than the possibility of carcinoma.

REISCHAUER claimed that like all former theories, the inflammatory theory of the development of ulcer does not explain the typical localization of the lesion or the fact that in the great majority of cases only 1 ulcer is found. Resection is not justified as prophylaxis against carcinoma in gastritis. Neugebauer's

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changes are usually of a chronic type. Hypertrophic, hypertrophic atrophic, or atrophic mucous membrane changes may be present. There is also a considerable cellular infiltration between the glands and in about 50 per cent of the cases there is a pronounced hyperplasia of the follicular apparatus (so called gastritis follicularis) localized at the pyloric end. In the very earliest stage, that preceding the formation of erosions, Buechner has been able to prove the presence in man of a fibrinoid necrosis which is subsequently digested by the gastric juice with the formation of an erosion.

That these changes in the mucosa are not secondary conditions of irritation in the tissues surrounding the ulcer, but primary to, or parallel with, the initial stage of ulceration is shown by the fact that the gastritis is uniformly pronounced over the entire pyloric end irrespective of the site of the ulcer, and by the fact that this type of gastritis (with clinical symptoms of ulcer) occurs also without ulcer.

It is to the biochemical conditions (the acid gastric juice) that we must look for the primary cause of the typical gastric and duodenal ulcer.

Newer histological knowledge now permits an anatomical division of the glands of the stomach. Counting from the œsophagus, the following zones occur: (1) a narrow zone of cardiac glands (ordinarily 1.5 cm. wide), (2) the zone of fundus glands, (3) the zone of pyloric glands, which extends higher up on the lesser curvature than on the greater curvature, and (4) the duodenal mucous membrane.

The fundus gland area differs from the other portions by the presence of the characteristic glands containing chief and parietal cells, and constitutes the sole source of hydrochloric acid and pepsin. In the other glandular zones slightly alkaline or neutral mucus is produced.

Ulcers arise in the areas of hydrochloric acid activity. The area in which the gastric juice is formed possesses a relatively high power of resistance to the juice. Therefore ulcers occur very rarely within the area of the fundus glands and are most common in the area of the pyloric glands, especially at the upper angle in the vicinity of the angulus where the opportunities for acid action are manifestly greatest, or in the proximal part of the duodenum, particularly close to the pylorus.

If the gastric juice had an opportunity to act upon the mucous membrane of the œsophagus, ulcers could also originate there. A predisposing factor is stagnation of the stomach contents such as that occurring in hour glass stomach.

Further evidence of this law of localization is afforded by postoperative jejunal ulcers, which are invariably located within the area of the intestinal mucous membrane and usually close up against the gastroenterostomy.

In ulcer disease, normal or hypernormal values of hydrochloric acid are found. Low acidity or achlorhydria is rare.

Earlier ulcer statistics indicating a higher incidence of cases with anacidity are not of decisive

value as they belong to the time preceding the introduction of fractional gastric analysis and the histamin test. Low acidity after a test meal does not necessarily indicate slow secretion of gastric juice because the acid may be partly neutralized by the alkaline duodenal juices. In pernicious anemia, in which a true achylia is nearly always present, neither acute nor chronic ulcers have ever been observed as a complication.

Pavlov believed that the gastric juice as it flows from the gastric glands has a constant acidity. Quite recently Hollander and Cowgill confirmed this theory in experiments on animals. They found that the maximum acidity in hydrogen-ion units was 0.91 ± 0.02 (0.55 per cent hydrochloric acid) and that variations in the rate of secretion were not necessarily associated with corresponding changes in acidity. It therefore follows that hypersecretion is brought about, not by concentration of the gastric juice, but by the production of a larger volume of fluid.

An excess of hydrochloric acid may be ascribed to three factors: (1) supersecretion, (2) failure of reduction or neutralization of the gastric juice, and (3) lowered resistance of the gastro intestinal wall. These three factors may act alone or together.

In experiments on cats, Buechner found that by pouring 0.8 to 1.5 per cent hydrochloric acid into the stomach it was possible to produce an erosive gastritis with gross and minute circumscribed defects of the substance the histological picture of which agreed in all details with that of acute peptic gastro-duodenitis. In experiments on rats, he found that by hypodermic injections of histamin, the most potent pharmacological agent for stimulating the production of gastric juice which is known it was possible to cause ulcers in the rumen or œsophageal portion of the stomach. Particularly regular was the appearance of these ulcers in the empty stomachs of fasting animals. These findings account for the occurrence of ulcers in burns, a complication that has long been recognized (Curling's ulcer). It has been demonstrated by Kaufmann that histaminoid products are formed in burns. In the light of the experimentally produced histamin ulcers, a resulting rise in the hydrochloric acid level in conjunction with an empty stomach explains the gastric and duodenal ulcers found in association with injuries from burns.

Under ordinary conditions a typical peptic ulcer never occurs in the intestinal canal below the common outlet of the bile and pancreatic ducts. Only in cases in which the gastric juice has an opportunity to act directly upon the mucous membrane of the small bowel are ulcers of a typical character found in that region. Such circumstances exist after gastroenterostomy when the jejunal mucosa adjoins the gastric mucosa and in cases of Meckel's diverticulum in which the intestinal mucous membrane shows islands of heterotopic mucosa of the fundic type.

Meckel's diverticulum is not uncommonly the site of ulcer formation. In contrast to the ordinary

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CHARLES F DU B MD

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To decide whether or not a patient is in a condition to stand resection requires great experience. In cases in which an ulcer has perforated into the free abdominal cavity Friedemann almost always does a resection if the condition of the patient is still good, i.e., in the first six hours. In some cases he does a resection even after twelve hours. When there is hæmorrhage threatening life, he performs the radical operation immediately. In the cases of aged and weakened patients, pre-operative preparation by the continuous intravenous drop infusion of calomel and by blood transfusion is given and the operation is performed under local anaesthesia so far as possible. If an additional anaesthetic is found to be necessary, nitrous oxide or avertin (administered intravenously) is used.

It is the beginner, rather than the experienced surgeon, who finds the site of the lesion an insuperable obstacle to removal of the lesion. For resections close to the entrance of the stomach, Friedemann advises the establishment of an intestinal fistula to protect the suture of the tubular structure. He has done a palliative resection by Madlener's method only once. He has had no occasion to perform it oftener as the cases that have come to him have been almost exclusively cases in which resection could still be done or those in which the ulcer was so embedded in indurations that even palliative resection was out of the question.

The author then describes in detail his method of procedure in cases of ulcer situated very deep in the duodenum and adhering to the pancreas. The advice he gives is based on his large experience. When there is uncertainty regarding the suture, he performs the palliative operation of resection for exclusion, but with removal of the pylorus. His results are very good. If he is unable to remove the pylorus because of induration, he now performs a posterior gastro-enterostomy although previously under such circumstances he performed the resection without removing the pylorus. He states that peptic jejunal ulcer is dangerous and extremely difficult to remove after extensive resection for exclusion. After giving further details he concludes that ulcers should be removed when this can be done without danger to the patient.

He next discusses the second of the 3 groups mentioned, cases in which ulcers recur again and again. In the majority of these cases he finds that the operation was not sufficiently thorough, and especially that the pylorotomy was not extensive enough. Recurrence is very rare if an ulcer has been thoroughly removed.

In the third group of cases the symptoms are caused by incorrect operative technique, gall bladder disease, or conditions of the stump of the resected stomach.

Symptoms persist also in patients who take refuge from circumstances and their psychic effects in their disease, and who obtain (perhaps in very many cases) money compensation from insurance.

VOGELER (Z)

Zukschwerdt, L., and Eck, T. The Treatment of the Freely Perforated Ulcer of the Stomach and Duodenum (Die Behandlung des frei durchgebrochenen Geschwüres des Magens und Zwölffingerdarmes). *Deutsche Zeitschr. f. Chir.*, 1931, cxxxii, 299.

This is a report on 117 cases of free perforations of gastric and duodenal ulcers which were treated at the Heidelberg Clinic during the last ten years. Since 1924 a distinct increase of perforations has been observed, which perhaps is related to the better nutritional conditions after the period of inflation. Men between the twentieth and fortieth years of life have been affected most often. Sixty-three per cent of the patients have been laborers at heavy work. Apparently, variations of pressure in the abdomen resulting from heavy body work may favor perforation. This is suggested by the fact that in two thirds of the cases the perforation occurred during the day. In 1 case it occurred during fluoroscopic examination, and in another case shortly before fluoroscopic examination as the patient stood in front of the fluoroscope. However, the authors believe there is little danger of perforation of an ulcer from the administration of the contrast medium since in most cases today only a few swallows of contrast medium are given for fluoroscopic examination.

The repeated perforation of ulcers in the same patient described in the literature was observed 4 times. In 1 case a transverse resection had been done a month previously because of a perforated gastric ulcer, and the new ulcer was found in the gastric suture. In the 3 other cases perforation of a duodenal ulcer had occurred and later a peptic ulcer in the anterior wall of the efferent gastro-enterostomy loop had perforated. It is noteworthy that renewed perforation of an ulcer that had been simply sutured over was not observed. In 10 cases (20.3 per cent) several ulcers besides those perforated were found. The perforated ulcer was usually aboral. The ulcers lying near the pylorus showed a greater tendency to perforate because of the marked peristalsis in this region. The site of the perforation was most often the anterior wall of the pyloric portion.

The total mortality of the ulcer perforations was 37 per cent. If the cases of 6 patients in a moribund condition are subtracted, the mortality was 33.9 per cent. The mortality of the women, 71.5 per cent, was higher than that of the men. The reason for this was that the women were admitted too late as the diagnosis of gall stones was usually made first. The mortality depends upon the age of the patient, the site of the ulcer, the duration of time between the perforation and operation, and the nature of the operative intervention. The relatively good prognosis in the first twelve hours is explained by the fact that at this time a toxic form of peritonitis with a more favorable outlook is encountered, whereas later unfavorable bacterial peritonitis develops.

The object of the treatment is to overcome the peritonitis and close up its source. The simplest operation for elimination of the source of the infec-

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maintained their weight much better than the others. Of the ten control dogs receiving no mucin, ulcers of the duodenum developed in six. Three of the six had two ulcers. This is an ulcer incidence of 60 per cent. Of the seventeen dogs receiving mucin with their food, ulcers developed in none. The period of observation was not too short for the development of ulcers in the latter group as Berg and Jobling have demonstrated that ulcers are well developed in from twelve to sixteen days after the establishment of the fistula and penetrating punched-out ulcers appear within a relatively short time.

JOHN W. NUZUM, M.D.

Gosset and Leriche. Postoperative Peptic Ulcer
(L'ulcère peptique post-opératoire) *Presse med.*,
Par 1931, XXXIV, 1481

In discussing the pathogenesis of postoperative peptic ulcer, Leriche says that the lesion was formerly thought to be due to errors of technique, but is now known to be simply a continuation of the original disease. Surgical treatment does not alter the conditions that produced the original ulcer, it is either symptomatic, like gastro-enterostomy, anatomical, like excision, or physiological, like gastropylorotomy. In Leriche's opinion, peptic ulcer in man cannot be studied by experimentation on animals as the conditions in animals are too different from those in man. Postoperative peptic ulcer seems to be caused by hyperacidity of the gastric juice as it does not occur when surgical treatment of the original ulcer brings about achlorhydria, and it may be cured by an operation bringing about achlorhydria.

Experimentation on animals and surgery in clinical cases show that postoperative ulcer is frequent whenever operation causes stagnation and irritation in the antrum, and is rare when the antrum is removed. While the antrum is alkaline, it produces a hormone which acts on the glands of the fundus and causes the production of acid. The stomach protects itself against peptic acidity by an abundant production of mucus which in an alkaline medium, dissolves and forms a protecting layer. When, as the result of some disturbance, generally circulatory, gastroduodenitis develops and the quality of the mucus deteriorates, the duodeno-antral mucous membrane which has been differentiated for the purpose of producing a protective mucus, undergoes a regressive metaplasia to the intestinal type, the protective mucus is no longer produced, and ulcer develops.

Gosset discusses the treatment of peptic ulcer. He has found that the tendency toward recurrence of peptic ulcer is greatest in young subjects and after duodenal ulcer. In cases of peptic ulcer after gastro-enterostomy for duodenal ulcer anatomical restoration may be attempted, but must be supplemented by a plastic operation on the pylorus. To be effective, the pyloroplasty must include excision of two-thirds of the pylorus. When this sphincterectomy cannot be done a new and better gastro-enterostomy

may be made to improve the drainage of the stomach or a prophylactic resection of the stomach may be performed. In the cases of young patients who have had a duodenal ulcer the former method is contra-indicated as it is apt to be followed by another recurrence. In resection, two-thirds of the stomach should be removed if the continuity of the gastro-intestinal tract can be re-established by a terminolateral gastrojejunal anastomosis, and only one third if the stomach and duodenum can be reunited by a terminoterminal or terminolateral anastomosis. Gosset prefers the more extensive resection.

In cases of perforated peptic ulcer the choice of procedure depends upon the time at which the operation is performed. As a rule, the ulcer should be excised, the drainage of the stomach improved, and the anatomical conditions restored but sometimes it is impossible to do more than close the perforation. Operation may be performed in 2 stages with closure of the perforation in the first stage and anatomical restoration or prophylactic resection in the second stage several weeks later.

In cases of colonic fistula the best operation is simple liberation of the fistulous organs with anatomical restoration if possible.

Primary gastrectomy has such a high mortality that it is not entirely justified by the late results.

In the discussion of this report, DE QUERVAIN said that in the period from 1910 to 1920 he saw 9 peptic ulcers after 184 operations capable of producing them, whereas in the period from 1920 to 1930 he saw only 8 peptic ulcers after 337 such operations. He believes that the abandonment of von Eiselsberg's operation and possibly the use of absorbable sutures may explain the better results in the second series of cases. He thinks that in the prevention of peptic ulcer good position of the anastomosis is of more importance than the details of the operative technique.

KUMMER reported that of 297 cases in which an operation was done on the stomach a postoperative peptic ulcer developed in 7. All of the peptic ulcers followed gastro-enterostomy. In 6 cases the gastro-enterostomy was effected by suture, and in 1 case by button. Kummer performed various operations for the peptic ulcers as 6 of the patients had a perforation and 3 had a jejuno-colic fistula. He operated also on 4 patients from other services. Twenty operations were performed in the 11 cases. Six of the 11 patients died after the operation. Of the 5 who survived none lived longer than six years.

ALESSANDRI stated that he had seen 61 cases of peptic ulcer. In all, the lesion followed a gastro-enterostomy for duodenal ulcer. Most of the duodenal ulcers were of the callous type. Alessandri thinks that hyperacidity is very important in the production of peptic ulcers and advocates extensive resection for their prevention.

MAYER said that in his opinion spinal anesthesia is associated with as much shock as general anesthesia when it is used for operations on the stomach.

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musculature of the colonic wall is inhibited and at the same time the retaining sphincters are more active than normal. The abnormal reflex activity may be excited by a pathological state in the gut or elsewhere in the body acting as a focus for the generation of sensory impulses, but more probably the arc itself is abnormally sensitive so that it reacts in an exaggerated fashion to stimuli which would as a rule produce little effect. It is possible also that this abnormal sensibility is secondary to some abnormality of control of the reflex by fibers from the hypothalamus, which may normally exert an inhibitory influence on the involuntary splanchnic arc, much as the pyramidal fibers moderate the voluntary somatic reflex effects. Diminution of the hypothalamic control might be expected to result in exaggerated reflex effects. In other words, the normal inhibition of inhibition may be defective. It is possible also that the local nervous derangement is but part of a widespread condition akin to neurasthenia. The tendency toward retention of urine which is sometimes present in addition to retention of feces might be explained in a similar way.

Whatever the explanation, if the retention of feces is due in the last instance to excessive reflex activity in the region of the lumbar sympathetic outflow, section of fibers entering into the formation of the arcs concerned should destroy the reflex arc, abolish the nervous effect, and leave the muscles of the colonic wall free from active interference.

The operation described consists in dividing the lumbar splanchnic nerves just proximal to the inferior mesenteric ganglion. All of the nerves passing from the meshwork around the inferior mesenteric artery upward and backward on either side of the aorta are freed by blunt dissection and divided.

Five cases in which the operation was performed with satisfactory results are reported and discussed.

J. EDWIN KIRKPATRICK, M.D.

Meyer-Wildisen, R. Gas Cysts of the Intestine (Beitrag zur Pneumatosis cystoides intestini) *Schweiz med Wchnschr*, 1931, 1, 546

The rare disease frequently called emphysema intestinorum which is characterized by the formation of gaseous blebs from the size of a lentil to that of an apple, is not clearly understood from the bacteriological, the chemical, or the mechanical standpoint. Nearly all reports of the condition have described pathologico-anatomical changes in the bowels (ulcer, parasites, tuberculosis, stenosis) which undoubtedly play some role in the formation of the gaseous cysts. An injury of the bowel and a bacterial or mechanical agent capable of producing gas must be present. Accordingly the cystic disease is usually a complication of some other condition of the bowel and the treatment must be directed to the primary condition, upon which condition the prognosis depends. As the clinical picture of the disease is atypical, the diagnosis is usually made at operation or autopsy. The clinical picture most frequently suggests peritoneal tuberculosis which is not very far advanced.

The author's case was that of a man twenty-five years old. A sister of the patient was tuberculous. A month and a half before the patient sought treatment he had a gastric disturbance. This was followed by repeated attacks of abdominal pain which was especially severe in the right side and the lower part of the abdomen and by alternate attacks of diarrhoea and constipation. The patient lost 10 kgm. His temperature was 37.2 degrees C and his breath was foul. The abdomen was slightly distended, soft, and not especially sensitive to pressure. A diagnosis of peritoneal tuberculosis was made. Two weeks later the pains became much more severe, especially in the ileocaecal region, and the temperature rose to 38 degrees C. The patient suffered from diarrhoea, but there was no vomiting. The abdomen was slightly more distended. Operation was performed for a supposed acute exacerbation of chronic appendicitis.

The peritoneal cavity was found to contain 300 c cm of clear, odorless fluid. The caecum was greatly distended and covered with numerous gas-containing cysts the size of a cherry. A few cysts were found also on the distended ascending colon. The appendix was markedly inflamed, but macroscopically was free from cysts. In the ileum there was a lump of ascarides. Appendectomy was done and was followed by primary healing. The parasites were removed with santomim. After the operation the patient had two attacks of colic. When he was discharged he was free from all symptoms, and after seven months had gained 11 kgm. The appendix was not examined histologically.

The author attributes the bowel damage to the parasites. He believes that the enteritis with the resulting fermentation and abnormal peristalsis caused the diffuse gas formation and that the appendicitis was secondary. *BENVENUTO CAPALDI (2)*

Haggard, W. D. Intestinal Obstruction from Carcinoma of the Colon. *Ann Surg*, 1931, LVII, 717

Haggard states that the highest mortality from obstruction of the bowels—between 40 and 50 per cent—is due to carcinoma of the colon. Frequently in this condition there are no symptoms until obstruction occurs. In cases with symptoms of acute obstruction in which other common causes, such as hernia, can be ruled out, cancer of the colon should be suspected, especially if the patient is old. Fully 90 per cent of obstructive lesions in the colon in elderly persons are carcinomata.

Complete obstruction exists when obstipation occurs for a period of two to three days with pain, vomiting, and distention unrelieved after two turpentine enemas. One or more movements may occur from enemata below the block, but thereafter no feces or gas escapes and the pain increases. While obstruction of the small bowel is associated with more shock and vomiting and a fatal loss of chlorides, obstruction of the colon is none the less deadly. Visible peristalsis should be sought for as it is an important and frequent finding before paresis and

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H A M K OUT MD

Mayo, W J Surgery of the Large Intestine *Ann Surg*, 1931, xciv, 722

The author was asked by the officers of the American Surgical Association to present a paper on surgery of the large intestine based on the records of the Mayo Clinic from the first radical operation in 1890 to January 1, 1931. In this period, 5,426 operations were performed on the cecum, ascending colon, transverse colon, sigmoid, and rectosigmoid, and 3,312 operations on the rectum. In reviewing this mass of data representing forty-one years of a developing field of surgery, Mayo found much of interest. He states, however, that reports of smaller groupings of statistics presented by surgeons who have worked up their cases in great detail from every standpoint might in many respects have greater significance than composite statistics.

Following a review of the growth of knowledge regarding surgery of the large intestine in the period from 1890 to 1929, he presented statistical tables obtained from Rankin for the years 1929 and 1930. This review shows a gradual change from surgery controlled by gross pathology to surgery based on physiology. Of great importance in the increase in our knowledge are the X-rays and the various forms of endoscopic examination.

In 1909, Mayo presented before the American Surgical Association the results of anatomical investigations which demonstrated that the external peritoneal attachments of the colon on the right side do not contain blood vessels or other structures of importance, and that these attachments to the lateral abdominal wall may be readily divided so that the colon can be freed on the right side and to a considerable extent on the left side and drawn out of the abdomen for careful dissection under visual control. The part of the colon to which the omentum is attached does not permit this maneuver to the same extent.

In 1917, Mayo presented before the Association a paper on the anatomy and surgical relationships of the rectosigmoid. The region of the rectosigmoid is of great interest. It is the most constricted portion of the large intestine and the site where the type of epithelium changes.

Of the 31 papers Mayo has presented before the American Surgical Association, 6 dealt with the large intestine. They give a history of the development of this branch of surgery. Among the most outstanding contributions to this development was the adoption by C H Mayo in 1896 of the 2 stage operation for resection of the large intestine to overcome the obstruction which is so often present and later his modification and popularization of the Mikulicz operation.

Of great importance also was the contribution of Balfour who, in 1910, demonstrated the value, in primary resection in continuity of the sigmoid and rectosigmoid of passing a tube of the stomach-tube type through the anus and rectum to a point 6 or 8 in above the anastomosis and leaving it in place for from seven to ten days to carry off the gas,

prevent angulation, and maintain the intestinal channel in proper position.

In the decade from 1890 to 1900, operation was performed in the Mayo Clinic in 7 cases of tuberculosis of the large intestine. In 5, resection was done with extraordinary results. In those earlier years relatively more cases of tuberculosis of the intestine were seen than later.

In 1907, Wilson, Giffin, and W J Mayo reported 5 cases in which a portion of the sigmoid was excised for obstructive diverticulitis with the formation of tumor. These were the first cases to be recorded in which the pathological change in diverticulitis was demonstrated during life.

C H Mayo taught surgeons to wrap the colon with the omentum in cases in which the blood supply was seriously injured and, as far as possible, to use the omentum to protect the anastomosis in resections.

In surgery of the sigmoid the anatomical relation of the ureters in the pelvis must be taken into consideration. Especially on the left side the ureter may be so closely attached to a growth in the lower part of the sigmoid that it cannot be separated without the possibility of leaving a portion of the growth with the adherent ureter. In Mayo's first case of this character, in which, after a difficult operation, he found an otherwise normal ureter closely attached to the involved sigmoid in a removable malignant growth, he cut and tied the ureter at the brim of the pelvis and removed its lower part with the growth, intending to remove the kidney at the same time. The condition of the patient did not permit removal of the kidney at that time, but Mayo expected to be compelled to perform a nephrectomy when the patient had sufficiently recovered. He found to his surprise that no ill effects followed. Since that time he has not hesitated to tie and cut a normal ureter in similar cases.

In 1917, Mayo first performed transperitoneal sigmoidotomy for the removal of a bleeding papillomatous growth and found it very easy.

In the course of exploration in cases of carcinoma, the finding of enlarged lymph nodes has frequently led to interruption of a radical operation, but unless such nodes are removed and proved to be carcinomatous the conclusion that excision is useless is not always justified. In many instances in which Mayo has operated upon patients who have been subjected to such explorations the nodes have been found not carcinomatous and radical operation has been performed successfully.

There are certain exceptions to the inadvisability of radical operation for incurable carcinoma. Chief of these is the removal of an operable primary growth when secondary growths are present in certain situations such, for instance, as the liver. The liver has the greatest power of regeneration of any organ in the body. When carcinomata of the stomach, rectum, or large intestine can be removed locally with safety, it is sometimes advisable to excise the primary growth for palliation and to

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Lee, A E Acute Appendicitis Its Early Diagnosis
Med J Australia, 1931, II, 635

In order to diagnose acute appendicitis it is necessary to understand the mechanism of abdominal symptoms

Inflammation of the gut wall does not of itself evoke direct localizing signs Because of the embryological development, rotation mechanism, and size of the midgut, the primary intrinsic pain produced by distention anywhere along the course of this part of the intestine is felt only over the site of the mesenteric attachment, that is, in the midline in the epigastrium, above and around the umbilicus

Referred pain is produced when a stimulus overflows into other nerves entering the same segment and sensitizes these nerves so that they exaggerate responses along them and cause painful hyperesthesia even when light touch is the only stimulus The sympathetic system carrying sensory stimuli from the intestines sends connecting fibers to the spinal cord in the thoracic and lumbar segments

The reverse peristalsis syndrome is produced by irritation or inflammation in the lower portions of the gut which render these portions more irritable than the portions cephalad to them Under such conditions there is a reversal of the law that the stimulus to contract travels from a more irritable to a less irritable portion of the gut and that irritability decreases gradually from the cephalad to the caudad end Reverse peristalsis is manifested by nausea, vomiting, and constipation

Parietal pain is produced by spread of the inflammation from the viscus to the subperitoneal fascia in the area of the involved organ

The author recognizes a medical and a surgical appendicitis Medical appendicitis is a simple infection of the mucosa of the appendix due to an infection of the cecal mucosa, a lymph borne infection involving the periappendiceal glands, or a simple blood-borne infection with uncomplicated inflammation It is associated with slight nausea, vomiting, and pain in the right lower quadrant of the abdomen and may become surgical

Surgical appendicitis is an acute appendicular obstruction caused directly by the swelling incident to acute inflammation or indirectly by scar tissue narrowing the lumen and causing early occlusion, periappendiceal spread of the inflammation causing the formation of adhesions with kinking, or diffuse fibrosis of the appendiceal wall replacing the muscle tissue interfering with the emptying power of the appendix, and favoring stagnation A fecolith predisposes to local inflammation with rapid block The danger lies in the resulting necrosis of the appendiceal wall with final rupture

In the presence of the usual signs of acute appendicitis including nausea, vomiting, and tenderness and rigidity in the right lower quadrant of the abdomen, the most important factor indicating surgical appendicitis is a history of persistent diffuse epigastric midline pain present at the onset It is to this region that the primary intrinsic pain stimuli

are sent Also important is a history of recurrent attacks of abdominal pain

In the differential diagnosis, inflammation of Meckel's diverticulum and volvulus of the small gut are indistinguishable from acute appendicitis In a sophisticated subject acute salpingitis may be confusing as the patient will deliberately place the intrinsic midline pain higher than it is All other intra-abdominal conditions are excluded by the history, which is often of much greater value than the findings A history of diffuse epigastric midline pain which has persisted for several hours and is associated with the other findings of acute appendicitis almost always signifies an obstructive appendicitis requiring immediate operation

HAROLD M. BRILL, M D

Bancroft, F W Hæmangioma of the Sigmoid and Colon *Ann Surg*, 1931, xciv, 828

Hæmangioma of the rectosigmoid is usually congenital The most prominent sign is repeated bleeding from the rectum, usually beginning in the first decade of life

The condition is serious as death is apt to occur from the hemorrhage

In the cases on record the treatment was in general unsatisfactory The author reports a case in which cure was obtained by injecting the superior hæmorrhoidal vein with a sclerosing (40 per cent) of sodium salicylate Colostomy was done to put the bowel at rest during the period of repair

HOWARD A. MCKNIGHT, M D

LIVER, GALL BLADDER, PANCREAS, AND SPLEEN

Elmroth, R, and Taussig, J B The Cholesterol Function of the Gall Bladder *J Exper Med*, 1931, lii, 775

The authors analyzed the gall-bladder and hepatic bile and determined the bilirubin content in the cases of seven human beings and four dogs In several instances samples were obtained by puncture of the common duct at operation

It was found that the gall-bladder bile contained much more cholesterol than the hepatic bile That this increase was not explained by concentration alone is shown by the bilirubin figure Errors due to cellular debris were ruled out by filtering The greater cholesterol content of the gall-bladder bile probably had its source in the wall of the gall bladder This conclusion is supported by the fact that biliary epithelium is derived from the intestinal tract and there is considerable evidence that the intestine is the site of origin of many of the sterols of the stools

With regard to stone formation, the authors state that the absorption of bile salts seems to be accelerated by infection and as a result of the reduction of the bile salts cholesterol is deposited since it is the bile salts which keep the cholesterol in solution

WILLIAM J. FANNENBAUM, M D

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WILLIAM J T NE CW MD

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the duct, reconstructive secondary operations are always much more difficult. Reconstruction operations are of the following types

1. A plastic operation in which the wall of the gall bladder, and the stomach (full thickness or serosa and muscularis of the latter) and the greater omentum are used and a rubber tube (so called *drain perdu*) is introduced and sutured in place. The author warns against the use of the *drain perdu*, emphasizing that a retained drainage tube may lead to decubitus or stenosis of the common duct. He believes that the good results obtained by this method may be accomplished more safely by cholecystogastrostomy or external drainage.

2. Choledochoduodenostomy or choledochogastrostomy. Lateral anastomosis between the common duct and duodenum or stomach is indicated in cases of marked dilatation of the common duct with anatomical changes in its walls. This operation was done 8 times in the Fedorov Clinic (6 choledochoduodenostomies) with good results. End-to-side union of the common duct and duodenum is indicated only in cases of marked gastroduodenal obstruction in which the common duct has been accidentally or intentionally severed. In high obstructions or extensive changes in the bile ducts a hepatocholeangioenterostomy may be attempted. However, this operation does not give good permanent results as the patients usually die of septic cholangitis if not of the original disease.

3. External union of the fistula opening with the intestinal tract by means of an extracutaneous rubber tube. This is a very simple operation and the only possible and favorable procedure for exhausted patients who have lost bile for a number of months. Therefore it must be considered an operation of necessity or a procedure preliminary to a more radical operation. It was done 4 times in the Fedorov Clinic.

4. Anastomosis of the fistula to the intestinal tract. The fistulous tract is dissected out with its surrounding skin scar and sutured into the stomach or duodenum. The patient immediately receives the bile in the bowel and recovers very rapidly. Nevertheless the mortality of the operation is very high because of postoperative hemorrhage. The operation was done twice in the Fedorov Clinic without success (death from hemorrhage). In the total literature there are records of 24 cases in which it was performed, 17 of the patients died and 7 recovered.

In cases of persistent biliary fistulae which are accompanied by severe inflammation and mucosal swelling good results may sometimes be obtained by introducing a duodenal tube and injecting from 200 to 300 c cm. of hot (from 60 to 75 degrees F.) sodium sulphate solution. The pre-operative preparation of patients by blood transfusion, the oral administration of their own bile, and the feeding of Vitamin D improves the prognosis considerably by decreasing the danger of severe postoperative hemorrhage.

The author has collected from the literature 215 cases of various reconstructive operations on the

biliary tract. In 160 the immediate results were good, and in the remaining 55 they were negative.
G. ALIPOV (Z)

Krotoski, J. The Study of the Carbohydrate Metabolism, and Its Value in Surgical Diseases of the Pancreas (Examen du métabolisme des hydrates de carbone et sa valeur dans les affections chirurgicales du pancréas) *Chir. clin. Polonica*, 1931, II, 166.

This study was made on 125 patients, 20 of whom had surgical diseases of the pancreas. In 1 subacute case of pancreatic necrosis spontaneous glycosuria occurred. In 4 of the 6 acute or subacute cases of necrosis, sugar was present in the urine two hours after the ingestion of dextrose. Of the 81 patients with non-pancreatic lesions, the urine of 4 showed sugar varying in amount from a trace to 2 per cent. Three of these 4 patients had biliary tract disease, and 1 had a gastric cancer. Because of the damage to the kidneys in toxic conditions such as pancreatic necrosis, tests for sugar in the urine in such conditions are of little diagnostic value.

In all of the 4 cases of acute pancreatic necrosis reviewed the fasting blood sugar was high, ranging from 0.168 to 0.266 gm. per 100 c cm. However, it was high also in cases of purulent peritonitis, in which it ranged from 0.154 to 0.185 gm. In early perforations of duodenal ulcer without peritonitis, in acute appendicitis, and in intestinal obstruction the blood sugar was normal or only very slightly increased. In acute conditions of the biliary passages a slight elevation from 0.120 to 0.144 gm. was found. In cases of acute peritonitis with high blood sugar which came to autopsy, no changes in the pancreas were observed. Determinations of the fasting blood sugar in the postoperative course of pancreatic disease give a good idea of damage, exacerbations, or sequestrations of pancreatic tissue.

For the tolerance determinations, 50 gm. of dextrose in 20 per cent solution were given orally. The blood sugar was determined before and forty-five minutes and two hours after the sweet drink. In the 6 acute and subacute cases of pancreatic necrosis the curves revealed a serious disturbance of carbohydrate metabolism. Of 14 chronic cases, 13 showed a decrease in tolerance. Of 42 patients with biliary tract disease, a few more than 23 per cent had demonstrable pancreatic lesions, but in addition a number in whom concomitant pancreatic involvement was not probable had poor sugar-tolerance curves. Other factors, such as liver damage and acidosis, might have been responsible. Of 14 cases of neoplasms, 11 showed a decrease in tolerance. Hyperthyroid patients showed a marked glycaemia.

When 10 units of insulin were given before the sugar in pancreatic affections there was a marked flattening of the curve, but when the decrease in tolerance was not due to pancreatic insufficiency the dose of insulin did not markedly affect the curve. Therefore in insulin resistant cases the pancreatic factor was excluded.
GEZA DE TAKATS, M.D.

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t h i t l t

Of the 118 patients with hæmolytic jaundice who were subjected to splenectomy, 4 died in the hospital. Approximately 86 per cent of the patients who recovered from the operation are living, and 83 per cent of them are in good health.

Of the 41 patients operated on for hæmorrhagic purpura, 2 died. One of them died from cerebral bleeding.

From the data cited it is evident that, contrary to the prevalent view of the hazardous nature of splenectomy, the operation gives results which compare favorably with those of other major abdominal operations and in spite of the relatively common mistakes in diagnosis, the conditions associated with disorders of the spleen and amenable to splenectomy can be readily identified provided complete data concerning the blood are correlated with the clinical history.

Since the operative results in cases of splenic anemia are contingent largely on the presence of secondary affections of the liver and portal obstruction, the importance of early diagnosis and operation is apparent.

Because of the high incidence of secondary affections of the liver, the small operative hazard, and the extremely favorable late results, splenectomy seems to be the safest procedure in all cases of hæmolytic jaundice.

In hæmorrhagic purpura, splenectomy is a comparatively safe procedure and its benefits are lasting. In severe cases, delay of operation is associated with danger.

MISCELLANEOUS

Elkin, D. C. Subphrenic Abscess. *J Am M Ass*, 1931, xcvi, 1279.

Subphrenic abscess is an important surgical problem because it occurs as a complication of the most common surgical diseases: appendicitis, cholecystitis, and peptic ulcer. The diagnosis is frequently puzzling and the mortality high.

Since the pus is localized in well-defined areas, the study of subphrenic abscess is largely anatomical. A complete description of the subphrenic spaces was given by Barnard.

In the diagnosis, the history of the original infection is of the greatest importance. As a rule the signs of toxæmia and infection appear after a variable period of improvement following the original operation. The physical signs vary with the size of the abscess and its location. In abscess of the subhepatic area or lesser sac, bulging may be seen in the epigastrium or below the costal margin and a tender mass may be felt. Occasionally the liver is pushed down by a right extraperitoneal abscess. Examination of the chest may show evidence of consolidation from lung pressure due to elevation of the diaphragm or a chest infection. The greatest help in the diagnosis is the X-ray.

An abscess above the liver is approached most safely and directly by the two stage transpleural operation. In abscess in the subhepatic region, the incision should be made over the most prominent part of the tumor.

SAMUEL KAHN, M.D.

GYNECOLOGY

UTERUS

Also look II B On Th nd C f Uteri
Fbr id in th Negr R A w O l s M &
S J 93 lxxi 37

Uterine fibr d occ r with g eat freq ency in n gr women Of the pati nts whose case a e re viewed 7 per e t w e b t w en th rty a d fo ty fi e yea s of g In 60 p r c e t of the ca e the ch f symptom w s p n Th s can t alw ys be ttr buted to the tum its lf M t f qu tly it is d to inflamm t y dhe ns to co t quo struc tu es Th i cide e f haemorrh ge n the ca e r e ed wa le s than 7 per ce t A rule bleeding occu s nly when the t mo a e of the ubmucos v nety

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Do t G Tollerse MD

II m nt a d Ko n g Soci l Method f Detecting
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d d p t l d l d l t e n)
Gy e f b l 93 99

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cancer treatment cooperating with gynecological and surgical clinics and of numerous diagnostic centers under the direction and control of the treatment centers

This medical organization should be supplemented by education of the public by books, lectures, pamphlets, journals, motion pictures, radiophone talks, exhibitions, and cancer weeks. Efforts should be made to suppress charlatanism and dangerous advertising by legal regulations, an international union against charlatanism, and medical control of publicity

AUDREY GOSS MORGAN, M D

ADNEXAL AND PERIUTERINE CONDITIONS

Bonnet, L. Remarks on Adnexal Tuberculosis with Reference to a Case with Considerable Involvement of the Great Omentum (*Remarques sur la tuberculose annexielle a propos d'un cas avec envahissement considerable du grand épiploon*). *Bull et mem Soc d chirurgiens de Par*, 1931, **xxiii**, 525

A girl eighteen years of age was admitted to the hospital because of a mass in the abdomen which had been present for several months. She had been delivered of a healthy infant in August, 1927. Menstruation recurred toward the end of November, but there was no period in December. In January a diagnosis of pregnancy was made. The abdomen increased in size progressively for several months, but no fetal movements were noted. The following July there was a sudden decrease in the size of the abdomen without apparent cause and a whitish secretion from the nipples appeared. The patient seemed to be in good condition, without fever or emaciation.

Palpation revealed a non-painful, hard, very irregular, and adherent juxta-uterine mass which suggested fetal retention after an extra-uterine pregnancy of about seven months.

When the peritoneum was opened an adherent omentum covering all of the organs of the abdomen was discovered. After progressive liberation of the wall, it was found that the lower three-fourths of the omentum formed part of a large, hard, irregular mass which passed behind and was adherent to the uterus and connected with two adnexal masses. The adhesions were carefully liberated and the mass removed by a Kelly hysterectomy from right to left. A Mikulicz drain was then introduced and the abdominal wall closed in three layers.

The operation was followed by smooth recovery. The drain was removed on the tenth day. Histological examination of the specimen revealed fibrocascous tuberculosis.

Adnexal tuberculosis is more common than was formerly believed. A careful histological examination of specimens will show that apparently simple adnexitis is often tuberculous. The reported incidence of tuberculous adnexitis as compared with ordinary inflammatory adnexitis ranges from 7.69 to 12 per cent. Although the omentum may be the primary site of tuberculosis, in the author's case

its involvement appeared to be secondary to the adnexal lesions.

Tuberculous infection by the ascending route is rare, but hæmatogenous tuberculosis is much more frequent. In the case reported by the author the infection was probably hæmatogenous. Tuberculosis is rare in the sex glands, but often attacks the excretory apparatus (epididymis and tubes). In more than three-fourths of cases of adnexal tuberculosis sterility is present. Some gynecologists regard the sterility as the predisposing cause of the tuberculosis whereas others regard it as the result of the tuberculosis.

In some cases pregnancy seems to precipitate the development of adnexal tuberculosis, as in the author's case, in which the disease developed several months after a normal delivery. Remilly, in his thesis, refers to two cases in which the condition developed shortly after delivery and one case in which it developed two months after an abortion. Its occurrence under such circumstances is probably favored by diminished resistance.

Menstrual disorders are common in general tuberculosis. Metrorrhagia and menorrhagia are rare, but amenorrhœa is much more frequent. The latter often occurs in cases of delayed puberty. It may be progressive, temporary, or irregular or may appear suddenly, as in the author's case. Dysmenorrhœa is just as frequent. It may occur with or precede the tuberculous lesions. In the diagnosis the Besredka reaction, even though inconstant, may be of aid.

When, besides the genital tuberculosis, there is tuberculosis of other organs, the treatment should be exclusively medical (heliotherapy, ultraviolet irradiation, X-ray irradiation, and the use of benzyl cinnamate and iodine). Tonneff obtained good results in several cases from intramuscular injections of colloidal iodine in an oily suspension. Medical treatment may be tried also in mild cases. In others surgical removal of the diseased organs is best.

Very good results have been obtained from surgical treatment with or without removal of the adnexa in the ascitic type of tuberculosis and the so-called cold abscess of the ovary. In the fibrocascous type the results depend upon the extent of invasion and the importance of the pelvipertonic lesions.

In the only slightly adherent types, hysterectomy is no more dangerous than in ordinary adnexal affections. The mortality ranges from 2 to 4 per cent and the late results are good. In cases of adnexitis with extensive pelvipertontitis, peruterine abscesses, or extensive intestinal adhesions, the results are far from good, the mortality is between 10 and 20 per cent, and serious secondary complications may develop. Parietal suppurations and fistula are common. The prognosis can be considered good only in mild cases in which the condition is localized. It becomes progressively less favorable with the further advance of the lesions. Drainage does not seem to favor fistula formation. Roentgenotherapy without or after operation has given good results with healing of postoperative fistula.

EDITH S. MOORE

GYNECOLOGY

UTERUS

Also look H B O Thous d Ca s f Uteri e
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a monthly recrudescence of the symptoms (Tixer) When the uterus has not been removed menstruation may occur and this may lead the surgeon to search for uterine malignancy. On pelvic examination the tumor is found in the cul de sac laterally placed. Its size sometimes attains that of an adult's head. The mass is usually quite firmly fixed, but not to the stump of the cervix.

The condition must be differentiated from fibroma of the cervix, pelvic cellulitis, encysted serous peritonitis, foreign body (sponge), and tumors of neighboring organs. Tumors of neighboring organs can usually be excluded without difficulty. When another surgeon has performed the original operation the diagnosis can never be positive as there is no way of being certain that the adnexa were entirely removed.

ALBERT F. DE GROAT, M.D.

Meyer, R. The Pathology of Some Special Ovarian Tumors and Their Relation to Sex Characteristics. *Am J Obst & Gynec*, 1931, **XXI**, 697.

Every body cell functions even if it is abnormal and cells of a new growth may exhibit a specific functional capacity corresponding to the function of the tissue from which they arise.

Disgerminoma ovarii is seen very often in pseudo hermaphrodites. Twenty-seven cases have been collected. In four a definite testicle, in eight a doubtful testicle, in one a definite ovary, and in five a probable ovary was present on the other side. In five cases in which the tumors were bilateral the patients showed predominantly female characteristics, but it was impossible to determine the nature of their sex glands definitely.

The author has collected twenty-one cases of ovarian disgerminoma in women with a typically female body and without hermaphroditism. In five the tumor was bilateral, in two, the condition of the other ovary was unknown, in eleven the other ovary was normal, and in three the other ovary was completely absent. One of the striking features of disgerminomata occurring in the ovary is the early age at which the tumors develop, usually the second or third decade. In the testes of normal men or male hermaphrodites disgerminomata occur much later.

As the neoplasms originate from undifferentiated sex cells they have no specific hormonal influence and therefore do not stimulate the development of secondary sex characteristics. In the female, disgerminomata may attain an enormous size and thereby destroy the ovary and even the uterus.

Granulosa cell ovarian tumors show a varying structure. They may occur as folliculomata often associated with cysts as a solid mass, as thin cords, as tubules as a solid carcinoma like mass, which often contains areas of hyaline degeneration of the stroma, or as a diffuse structure resembling a sarcoma. They arise from undifferentiated cells and not from epithelial cells of the true follicle. They occur most frequently in women between sixty and seventy-four years of age in whom the ovary no longer contains follicles. They are by no means un-

common. Of thirty-three cases collected, three were those of children, five those of women between twenty and thirty-nine years of age, eight those of women between forty and forty-nine years of age, and seven those of women over fifty years of age, five of whom were more than seventy years old.

In twenty-seven cases bleeding was an important sign. After removal of the tumor the abnormal bleeding stopped, and in the cases of younger women menstruation again became normal if some of the ovarian tissue was preserved.

The third group of tumors discussed in this article, the arrhenoblastomata of the ovary, are of particular interest as they tend to cause women previously exhibiting normal female characteristics to take on the characteristics of the male. The breasts become atrophied, the ovary not involved by the tumor undergoes shrinkage, and atrophy of the uterus occurs with consequent amenorrhoea and sterility. Arrhenoblastomata produce typical sex hormones identical with those which stimulate the development of normal males.

Not all types of ovarian neoplasms are capable of defeminizing or masculinizing their hosts as was formerly thought. This influence is exerted only by certain tumors which possess distinct morphological and biological characteristics.

In conclusion Meyer says that it is of great importance for the gynecologist to know that persons with disgerminomata, granulosa-cell tumors, and arrhenoblastomata may usually be cured by operation, and that it is unnecessary to remove the other ovary if it is seemingly unaffected. However, disgerminoma is bilateral in 20.8 per cent of cases.

E. L. CORNELL, M.D.

MISCELLANEOUS

Rizemon, P., and Lambret, M. Twenty-Five Resections of the Presacral Nerve for Dysmenorrhoea and Pelvic Neuralgia (vingt cinq resections du nerf presacre pour dysmenorrhoe et neuralgie pelvienne). *Arch. franco belges de chir.*, 1930, **XXIII**, 641.

Of the twenty-five patients whose cases are reviewed, ten were cured, six were benefited, four were not benefited, and five could not be traced. In most of them the dysmenorrhoeic or neuralgic phenomena appeared quite late in reproductive life. As a rule the pains begin after the first or the second labor but sometimes they do not occur until after the third or fourth labor. In the cases reviewed, only four patients had suffered from the beginning of menstruation and these had noted an increase in the pain after the birth of a child.

Few of the patients suffered only at the time of menstrual periods. In most of them the pains came on also between periods or were continuous and especially severe at the time of the periods, when the patient was fatigued or during sexual intercourse.

The lesions revealed at operation were often unimportant. In one case there was no visible lesion. In another a pedicled hydatis was found hanging

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OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Wilson, K M, and Corner, G W The Results of the Rabbit Ovulation Test in the Diagnosis of Pregnancy *Am J Obst & Gynec*, 1931, **xxi**, 513

The test described is begun by giving to a fully mature female rabbit weighing 4 lb or more, usually at about 5 00 p m, an intravenous injection, without precautions for sterility, of 5 c cm of the urine to be tested. The next morning at 9 00 a m or later, that is to say, sixteen hours or more after the injection, the rabbit is prepared for operation under ether anesthesia by an aseptic technique and an exploration is done through a midline abdominal incision. A positive result is determined by the presence in the ovaries of recently ruptured graafian follicles.

The authors believe that this procedure should prove to be an extremely valuable and practical method for the early diagnosis of pregnancy. Except in one case of endometrial hyperplasia, a positive reaction has always indicated the presence of active fetal tissue in biological contact with the maternal blood stream or separated from it not longer than seventy-two hours. A negative reaction does not entirely exclude pregnancy as the intra-uterine or extra-uterine ovum may have perished and may have been retained for some time. The method may prove to be of value in determining the life or death of the ovum in the early months, but not its immediate death and not its death in the later months of pregnancy.

E L CORNELL, M D

Henrotay, J L Obstetrical Roentgen Diagnosis (Le radiodiagnostic obstetrical) *Gynec et obst*, 1931, **xxv**, 265

Obstetrical roentgen diagnosis has emerged from its uncertain beginning stage and its very encouraging results will doubtless be still further improved by improvement in the technique. Bumm says that the roentgen room is a necessary annex of the delivery room, and many obstetricians are giving increasingly more consideration to roentgen diagnosis in their teaching. Every large maternity hospital should have a good roentgen equipment and a qualified roentgen obstetrician to manage it.

Certain methods of roentgen pelvimetry permit absolutely accurate measurements of the pelvis, but are so difficult to apply that their use is as yet limited. During labor, teleroentgenography gives a good idea of the possibility of adaptation of the head to the superior strait.

Pregnancy can be diagnosed by roentgenography before there are any definite clinical signs. The roentgenogram is the only medicolegal document of any value when pregnancy must be proved. With its aid, the mistake of diagnosing pregnancy as a

tumor can be prevented and the co existence of pregnancy and tumor may be determined.

If the roentgenograms are properly interpreted it is not difficult to make a diagnosis of the presentation and of multiple fetuses. Characteristic signs of death of the fetus are seen in the roentgenogram. Spalding found that soon after the fetus dies the brain retracts and the bones of the skull override each other. This is called "Spalding's sign" and seems to be pathognomonic except during labor. However, the overriding of the bones of the skull during labor, which is due to pressure, is usually less marked than the overriding due to death of the fetus. The diagnosis of extra-uterine pregnancy has become possible by roentgen examination combined with sounding of the uterus or the intra-uterine injection of lipiodol. Anencephalus, hydrocephalus, and monsters can be easily diagnosed during pregnancy by the use of roentgen rays.

Roentgenography is of great value to show medical students the progress of pregnancy and the dynamics of labor.

In some cases the roentgenogram settles doubts that could not be settled by the classical methods of palpation, auscultation, and vaginal examination.

AUDREY GOSS MORGAN, M D

Naeslund, J Investigations on the Passage of Nitrogen-Containing Substances from the Fetus to the Mother (Untersuchungen ueber den Uebergang N haltiger Stoffe vom Foetus auf die Mutter) *Acta obst et gynec Scand*, 1931, **xi**, 474

The author reports investigations of the protein and water content of the serum and the fibrinogen, non-protein nitrogen, xanthoprotein, creatinin, uric acid, and amino acid content of the blood of the mother and child.

Investigations of the non-protein nitrogen, made in forty-one cases, gave the following results, which are surprising when they are compared with the data reported in the literature.

In all of the cases exact determinations showed that at the time of delivery the amount of non-protein nitrogen was less in the blood of the mother than in the blood of the child, and that in the child it was usually less in the blood of the umbilical vein than in the blood of the umbilical arteries. This is as would be expected as the greater part of the substances represented by the non protein nitrogen are formed by metabolism in the body and must therefore be transferred from the fetus mainly through the umbilical arteries and the placenta to the mother. Moreover, it seems that the amount of non protein nitrogen in the fetal blood is not constant like the serum protein and fibrinogen, but varies more or less in accordance with the fluctua-

from each tube. In two typhoid cases operated on disclosed a unilateral omental cyst coarcted with the uterus as congested soft and retroverted or sessile and mobilized in position. In seven cases operation revealed a little serous effusion in the pouch of Douglas. Four cases of pelvic abscess in three cases chronic appendicitis in two cases of local inflammation of the peritoneum of origin and in one case of cervical metastasis with parametritis in the left side.

Resection of the paracervical nerve was done according to the Cotten technique. The only difficulty was venous hæmorrhage which occurred in only one case. Of five cases in which complete resection of the paracervical nerve was done the percentage result was

a cure in three and failed in one. Resection with hypogastric sympathectomy which was done in one case was followed by cure. Of fifteen patients treated by resection combined with another operation six were completely cured six were greatly benefited and three were not benefited. Dyspareunia and the intermenstrual pain are the best to cure by this treatment. Resection of the hypogastric plexus has definite regularizing effect on menstruation. It favors the abortion of pelvic diseases and the disappearance of dysuria and parametritis. It has beneficial effect on uterine lesions especially cervical metritis. In several of the cases reviewed leucorrhoea was decided after the operation. Therefore if the patient becomes pregnant. The twenty-five cases are reported and fail. P. 12.

latter. This was true also of the substances studied in the other examinations. When the uric acid values were compared with the corresponding non-protein nitrogen values, a certain agreement appeared to exist, cases with a high uric acid curve often exhibiting an increase in the non-protein nitrogen values as well.

Investigations of the concentration of amino acids in the blood of the mother and child were made in thirteen cases. In accordance with what has to some extent been known from the literature, the investigation showed that the amino acid content of the blood of the child is much higher than that of the blood of the mother. In one case with a particularly high value in the fetal blood the child showed evidences of asphyxia at birth. There did not appear to be any certain agreement between the amino acid and non-protein nitrogen values. However, the amino acids are to some extent in a special class because, unlike other non-protein nitrogen substances, they are not to be regarded as waste products of protein metabolism.

Theobald, G. W. The Albuminuria of Pregnancy. *Lancet*, 1931, CCXVI, 948.

It is well known that some apparently healthy men (and presumably women) pass albumin in their urine in demonstrable amounts, that diet, cold baths, and exercise may provoke albuminuria, and that severe exercise may be associated with the passage of blood and granular and hyaline casts.

In 1908, Jehle suggested that orthostatic albuminuria is caused by lordosis, and it soon became evident that in many children and some adults albuminuria can be provoked by keeping them, while sitting or standing in the position of lordosis.

The author attempted to determine whether the albuminuria of pregnancy can be explained on a mechanical basis. His work was done on human subjects and dogs in various conditions of lordosis, and on human subjects in the Walcher position. From the results he drew the following conclusions:

1. The position of lordosis causes dogs to pass albumin in the urine secreted by both kidneys, and is associated with a pressure of from 10 to 12 mm Hg in the inferior vena cava.

2. Because of the peculiarities of the renal circulation the kidney permits the escape of albumin if the pressure in the proximal end of the renal vein be raised by only from 3 to 4 mm Hg. However, if the increase of pressure in this vein is considerable and continuous collateral circulation will develop and the albumin will disappear from the urine.

3. The modified Walcher position almost always provokes the passage of albumin in the urine.

4. Walcher's position may cause sugar to appear in the urine even when albumin is absent. On one occasion it caused acetoneuria.

5. Red blood corpuscles may be found in the urine of patients after they have lain in Walcher's position but casts have not been seen. It is certain, however, that even the slightest degree of venous

congestion in the kidney may cause the passage of hyaline and granular casts, providing the congestion is maintained for a sufficient length of time.

6. A mild exaggeration of the normal curvature of the spine in women during the last few weeks of pregnancy may cause the passage of albumin in the urine.

7. A slow respiration rate in the standing position provokes albuminuria.

8. The albuminuria associated with pregnancy can be accounted for by mechanical factors, chief of which are the lordosis, the decrease in thoracic capacity associated with the latter months of pregnancy, and the weight of the uterus. The lordosis alters the diameter of the inferior vena cava and affects the flow of blood. A full stomach and a loaded colon may press on the inferior vena cava and be pressed by the uterus when the woman lies in the recumbent position. The onset of the albuminuria is probably determined by the diet.

CHARLES F. DUBOIS, M.D.

Pye-Smith, E. J. An Investigation into the Part Played by Maternal Syphilis in the Causation of Fetal and Infant Death and the Effects of Antenatal Treatment. *J. Obst. & Gynaec. Brit. Emp.*, 1931, XXXVIII, 578.

In an average group of pregnant women the incidence of syphilis was found to be probably less than 2 per cent. Abortion was not especially common among the syphilitic women. Syphilis does the most harm in the latter months of pregnancy and the early months of postnatal life. The results of antisyphilitic treatment are rather encouraging. Even one injection of novarsenobillon resulted in a considerable saving of fetal and infant life. Of a series of cases cited, a positive Wassermann reaction became negative after one course of treatment in 45.83 per cent and after two, three, or four courses of treatment in 76.46 per cent.

ABRAHAM A. BRAUER, M.D.

Blair, M. A Conservative Treatment of Incomplete Abortion. *Canadian M. Ass. J.*, 1931, LXV, 576.

This report is based on forty-one cases of abortion treated at the Vancouver, B. C. General Hospital during a period of six months. In all of the ten cases of complete abortion convalescence was uneventful.

The general principles governing the treatment of abortion are the same as those governing the treatment of an open wound. Except in the presence of serious hemorrhages, the chief general indications are complete bed rest and the application of an ice bag to the lower part of the abdomen. In some cases, elevation of the foot of the bed and, if bleeding occurs, the use of 0.5 to 1 c.c. of obstetrical pituitrin may be advisable. Fluids should be pushed, a well rounded diet should be given, the bowels should be kept open and the movements should be kept soft. Hemorrhage must be dealt with appropriately. In the cases reviewed, uterine and vaginal packing was not employed. Its routine use is con-

that the baby weighs from 8 to 8½ lb. If progress is not satisfactory, he performs a cesarean section.

After having witnessed the stormy recovery and listened to the complaints of women of this type for months after delivery on several occasions, the author has come to the conclusion that he would rather decline to undertake the management of such cases if he could not resort to cesarean section when labor is not normal.

Kurig, H. Results of Cesarean Section in Contaminated Cases at the Bonn Clinic in the Period from 1912 to 1928 (Ueber den Ausgang der unreinen Kaiserschnittoperationen in der Bonner Klinik aus den Jahren 1912-1928). 1930. Bonn, Dissertation.

The material reviewed included a series of 426 cesarean sections which were done in 18,185 deliveries. The incidence of cesarean section in this series was therefore 2.8 per cent. Of the 238 contaminated cases, death of the mother occurred in 34 (14.29 per cent) and death of the child in 22 (9.24 per cent). Of the clean cases, death of the mother occurred in 6 (3.1 per cent) and death of the child in 7 (3.7 per cent). Of 414 cases, death of the mother occurred in 41 (9.9 per cent) and death of the child in 29 (7 per cent). Of the contaminated cases, morbidity occurred in 71 but terminated in recovery. The morbidity quickly increased with the time elapsing after rupture of the membranes. It was greatest in the cases in which the temperature at the time of the operation was between 37.5 and 37.9 degrees C. The mortality was highest in the cases in which internal examinations were made.

The indication for the cesarean section was contracted pelvis in 174 cases, placenta prævia in 25, eclampsia in 18, tumor in 15, premature separation of the placenta in 3, transverse position of the placenta in 1, threatened rupture of the uterus in 2, premature rupture of the membranes in 2, atony in 3, prolapse of the cord in 2, peritonitis in 1, myocardial degeneration in 1, and a moribund state in 1. In eclampsia the operation must be performed in the pre-eclamptic stage as otherwise the results are poor for both the mother and the child.

The intraperitoneal operation was performed in 163 of the cases reviewed, the extraperitoneal operation in 28, and the Porro operation in 41. The mortality was lowest in the cases in which the extraperitoneal operation was done.

The cause of death was peritonitis in 14 cases, eclampsia in 6, postoperative pneumonia in 3, placenta prævia in 3, atony in 3, hemorrhage into the vertebral canal after lumbar anesthesia in 1, cardiac insufficiency in 2, paralytic ileus in 1, and brain lues in 1.

KRAUSE (G)

Cheval, M. Indications and Techniques of Episiotomy (Indications et techniques de l'épisiotomie). *Bruxelles méd.*, 1931, vi, 1324.

The author urges more extended use of episiotomy to prevent over-distention of the perineal muscula-

ture and subsequent prolapse of the genital tract. His argument is based on the well-known frequency of perineal relaxation after childbirth, whether or not the skin and vaginal mucosa have been lacerated.

Episiotomy was first performed by Ould in 1742. Michaelis employed a posterior median incision systematically, believing it preferable to a tear. Tarnier used a mediolateral incision carried to one or both sides of the anus. Both incisions are inadequate and subject to extension by tearing into a dangerous zone. The various lateral incisions which have been proposed (Demelin, Lichelberg, Dubois, Joulin, Schultz, and Scanzoni) preserve the skin and vaginal mucosa from tears, but fail to prevent attenuation of the perineal muscles.

In the technique used by the author the incision is made only when the presenting part has distended the perineum. With scissors, a horizontal section is made to the right toward the ischium, starting from the junction of the middle and lower thirds of the labia majora. This includes the skin, muscles, fasciæ, and vaginal mucosa and is made sufficiently deep to prevent laceration at the moment of delivery. Cheval believes it is better to err by excess than by parsimony. The operative wound is closed with interrupted silk-worm sutures introduced only from the skin surface and sufficiently inclusive to assure approximation of the deep structures. No suture is passed through the vaginal mucous membrane where the wound will be brought together when the sutures have been tied.

The results of this operation have been excellent although in 3 per cent of cases some degree of atrophy of the bulbocavernosus muscle occurred.

Episiotomy is indicated whenever the fetus cannot be delivered without marked distention of the pelvic floor and as a preliminary to all operative procedures conducted from below.

ALBERT F. DE GROAT, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Reeb, M. Late Postpartum Hemorrhage (A propos des hémorragies tardives des suites de couches). *Bull. Soc. d'obst. et de gynec. de Par.*, 1931, xv, 651.

Of 12,763 obstetrical cases treated at the Strasbourg clinic in a period of ten years, late postpartum hemorrhage occurred in 23. In 19 of the latter the uterus contained placental fragments, and in 4 only necrotic debris and fibrin. In 12 cases the puerperium was afebrile, but in 11 there were evidences of postpartum infection prior to the onset of the hemorrhage. Digital removal of the retained secundines was done in 20 cases. Curettage was performed only 8 times. The postoperative period was afebrile in 9 cases. With the exception of 1 patient who succumbed following hysterectomy after 2 unsuccessful attempts at digital removal of the retained fragments, all of the women with fever recovered.

Reeb concludes that the treatment described still remains the procedure of choice in all cases of retained secundines. Careful digital removal followed,

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Blood which is extravasated and becomes altered by clotting and direct contact with the tissues liberates a toxic substance which, when resorbed, produces endothelial damage. The latent period before the development or increase of albuminuria must therefore depend either on the rate of production or the rate of resorption of the toxin. It is possible also that in cases of repeated pregnancies with recurrent toxæmia some form of increased sensitivity to the hæmorrhagic toxin may be present. This would explain the greater incidence of complications in the cases of multiparæ.

When the blood can escape freely from the lower segment of the uterus through the vagina, as in placenta prævia, albuminuria is rare, whereas when the blood is retained in the uterine cavity or in the cellular tissues, even for a short time, albuminuria almost invariably results.

CHARLES F. DuBOIS, M.D.

Lewit, I. L. The Question of Chorionepithelioma (Zur Frage ueber das Chorionepitheliom) *Arch f Gynaek*, 1931, cxlv, 738

Lewit reports three cases of chorionepithelioma. The first was that of a twenty-four-year old woman in her second pregnancy. In the fourth month of the pregnancy cæsarean section was done and the tumor cleaned out. One and a half years later the uterus was removed because of advanced chorionepithelioma, and six months later a kidney was removed because of metastases. Autopsy disclosed metastases in the brain, lungs, liver, intestines, and muscles.

In the second case also the development of the chorionepithelioma was preceded by a normal pregnancy. After six weeks of persistent bleeding the uterus was evacuated. A month later curettage was performed because of renewed bleeding and decidual tissue was found. After two and a half months tissue was again removed from the enlarged uterus but was not examined. After a month the uterus corresponded in size to a pregnancy of five months. At bimanual examination a piece of tissue was removed which on microscopic examination proved to be chorionepithelioma. Death occurred twenty-four hours later. Autopsy showed advanced chorionepithelioma of the uterus with metastases in the tubes, lungs, liver, kidney, spleen, and adrenals.

In the third case, that of a woman twenty-three years of age, a spontaneous abortion had occurred and was followed by curettage. Two months later the patient was again pregnant. In the third month of pregnancy she was delivered of a chorionepithelioma. Two months of persistent bleeding and weakness were followed by curettage with the removal of polypoid masses. On examination, the tissue showed elements of chorion in the form of Langhans cells infiltrating the necrotic hyaline decidua. Regenerating uterine mucosa was nowhere to be seen. Later the patient had a normal pregnancy.

The difficulty of making a histological diagnosis is emphasized and the pregnancy reaction is recommended on the basis of experience of others. Surgery is the most effective treatment.

ROBERT MEYER (G)

dysfunction and pain may be set up much more readily in this portion. Quite often the symptoms of pyelitis occurring intermittently over long periods are found on pyeloscopic examination to be due to some form of dysfunction and are relieved by a single dose of morphine, eserine, pituitrin, or flavine.

The author reports studies made on medium-sized dogs under anæsthesia of the effects of various drugs on the blood pressure, kidney volume, and contractions of the kidney pelvis. The drugs were quinine, aspirin, caffeine, sodium citrate, pituitrin, eserine, atropine, adrenalin, histamin, acriflavine, and mercurochrome.

Quinine produced a fall in the blood pressure with a slight effect on the kidney vessels, but definite relaxation of the pelvis of the kidney with lengthening of the interval between the peristaltic waves of the pelvis. The peristaltic waves persisted even when the animal died.

Aspirin caused a slight fall in the blood pressure, no apparent effect on the kidney vessels, and a slight relaxation of the kidney pelvis with an increase in amplitude of the rhythmic contractions. In man, a general slowing of the peristaltic waves is seen when the pelvis contracts vigorously and quickly.

Caffeine produced a slight rise in the blood pressure. The kidney volume remained practically unaltered, but the kidney pelvis shows a definite sustained contraction with a marked increase in the amplitude of the peristaltic waves. This effect was more marked after a dose of $\frac{1}{4}$ gr than after a dose of 4 gr and disappeared after the injection of quinine.

Sodium citrate produced a slight vasodilatation with a fall in the blood pressure but a definite sustained contraction of the kidney pelvis with increased amplitude of the peristaltic waves. The contraction of the pelvis was maintained for a much longer period when the vagi were cut after the injection of the citrate.

Pituitrin caused contraction of the pelvis of the kidney and acceleration of the peristaltic waves in the pelvis and down the ureter. The usual effect on the blood pressure was noted.

Eserine caused contraction of the kidney pelvis.

Atropine sometimes apparently produced a contraction, but this may have been due to the release of some pressor action. Its chief action seemed to be the cutting out of vagal control.

Adrenalin caused a steady contraction of the pelvis coming on long after the blood pressure had reached its maximum and lasting long after the blood pressure had returned to normal.

Histamin produced a fall in the blood pressure often associated with a passive or secondary constriction of the kidney vessels and relaxation of the kidney pelvis. Numerous tracings showed that the two latter phenomena were quite independent of each other.

Acriflavine (5 c cm of a 2 per cent solution) produced a tracing practically identical with that produced by 0.003 gm of histamin.

Mercurochrome (15 c cm of a 5 per cent solution) produced a tracing practically identical with that caused by 0.003 gm of histamin.

The tracings obtained after section of the vagi or the injection of atropine suggested that the vagus exerts an inhibitory action on the contractility of the musculature of the kidney pelvis.

In conclusion the author says that the demonstration of the action of various drugs on the tone contraction, relaxation, and rhythmic activity of the kidney pelvis and its parts opens up many possibilities. Two drugs in particular stand out: sodium citrate and caffeine. The diuretic action of citrates has been believed due in large measure to the hydroæmic plethora induced, while the action of caffeine has been attributed to some obscure action on the secreting cells of the kidney. While these theories may still be regarded as correct, the direct action on the musculature of the collecting system from the pyramids to the ureter with a milking effect may be a quite important factor in determining the diuretic action of these drugs. Moreover, the action of drugs which induce or stimulate peristalsis or facilitate emptying of the renal pelvis by contraction of the pelvis (such as pituitrin or eserine), by increasing the peristaltic waves (such as caffeine and sodium citrate), or by inducing relaxation in some part of the collecting system musculature of the collecting system which is in a condition of spasm and ensuring uninterrupted peristalsis with free outflow of urine (such as histamin, mercurochrome, and acriflavine) must be decidedly beneficial in cases in which there is backworking or stagnation of urine in the collecting system. The very definite and marked effect of histamin raises many questions regarding the pathology of renal pain.

Hanner, J. P., and Whipple, G. H. The Elimination of Phenolsulphonphthalein by the Kidney. The Influence of Pathological Changes in the Liver. *Arch. Int. Med.*, 1931, *XLIII*, 598.

In experiments carried out on dogs the authors found that when necrosis of the liver was produced by chloroform poisoning the elimination of phenolsulphonphthalein by the normal kidney rose from the normal level of from 75 to 78 per cent to from 90 to 98 per cent, and with repair of the hepatic injury it returned to normal. Phosphorus poisoning caused a similar but less striking reaction. A definite increase in the renal elimination of the dye was noted also after experimental biliary obstruction.

After hepatic injury caused by chloroform the liver did not remove the phenolsulphonphthalein from the blood and did not excrete it in the bile, whereas the normal dog liver removes a large quantity of the dye from the blood and within two hours excretes in the bile about 10 per cent of the dye injected. A chronic biliary fistula or an Eck fistula decreases the excretion of the dye in the bile and causes a corresponding rise in the excretion of the dye in the urine. There is no evidence that a cholagogue increased the elimination of phenol-

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

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quire nephrotomy for their removal, they should be left alone

In many cases it is advisable to practice auto-vaccination, leave a ureteral sound in place for a few days, and irrigate the renal pelvis before operation. After the operation the drainage should be continued for several months. The only effective method of antiseptics is lavage of the renal pelvis. The diet should be such as will keep the urine acid. Mineral waters should be used in moderation and continuously. **ANDREW GOSS MORGAN, M D**

Nicholson, G W An Embryonic Tumor of the Kidney in a Fetus *J Path & Bacteriol*, 1931, XXXI, 711

Nicholson reports a kidney tumor in a fetus in which the structure of the developing organ was retained to an unusual extent.

The neoplasm involved the left kidney and was 6 cm in diameter. The kidney was displaced caudad and was flattened over the dorsal aspect of the posterior quadrant of the tumor. The capsule of the kidney continued over the tumor.

On section of the neoplasm, tubules of two types and glomeruli in all stages of development were seen. The latter were true glomeruli and quite distinct from tubules of various kinds and shapes more or less invaginated by areolar tissue or cellular parenchyma, the pseudoglomeruli.

The capsule consisted of a thin layer of fibrous tissue with many atrophic glomeruli. It represented compressed renal cortex. **ANDREW MCNALLY, M D**

BLADDER, URETHRA, AND PENIS

Ougley, R Gangrene of the Bladder (La gangrene vésicale) *J urol méd et chir* 1931, XXXI, 120

The author states that in many of the 167 cases of gangrene of the bladder recorded in the literature up to 1922 the cause was the action of a chemical substance introduced intentionally for therapeutic purposes or accidentally in the course of maneuvers to cause abortion. He cites instances of the injection of vinegar, ammonia, pyroligneous acid, a saturated solution of sodium chloride, potassium permanganate, and soap solution. The more concentrated the solution and the greater the quantity injected, the more marked the necrosis.

Gangrene of the bladder may be caused also by incarceration of the bladder by the pregnant uterus. This usually occurs between the third and fifth months of pregnancy and is followed by retention of urine. In 1910, O'Neill collected 68 cases. Infection, usually caused by the colon bacillus, must play a part.

In a third group of cases the condition is caused by the retention of a large quantity of urine due to some obstacle, a tear, stricture of urethra caused by a calculus, hypertrophy of the prostate, a myoma, vaginismus, hematometritis, a pessary, extra uterine pregnancy, a vaginal tampon, or an operation for uterine cancer.

In a fourth group are cases with persistent phenomena of cystitis in the absence of a mechanical obstacle to urination, which must be attributed to infection.

Besides these 4 groups there are cases in which the condition develops after typhus, pneumonia, traumatism of the pelvis and the spine, the evacuation of abscesses into the bladder cavity, dysentery, and irradiation therapy.

Gangrene of the bladder occurs most frequently in persons of middle age. In the old and the young it is rare. It is more frequent in women than in men. It varies in degree. It is a complication of already existing cystitis and, except in cases in which it is caused by the injection of an irritating substance, retention of urine is an important factor in its development. Retention demands intervention, usually catheterization, and the latter often causes infection and destruction of the bladder wall. Hematuria occurs. The most definite sign of the condition is the expulsion of fragments of mucosa through the urethra. Before the expulsion of the necrotic fragments the urine has a foetid odor.

In some cases the capacity and function of the bladder are completely restored. In cases of gangrene caused by retroflexion of the uterus the pregnancy is not interrupted and delivery takes place at term. In cases of moderate severity, recovery may begin in the first year in spite of complications, but complete restoration to normal is not realized. In cases in which the pathological process is extensive and deep the bladder is replaced by a sort of receptacle formed of connective tissue. This condition leads to chronic cystitis, tenesmus, urinary incontinence, and disease of the ureters and kidneys.

Of chief importance in the treatment is early diagnosis. In cases of pregnancy with retroflexion of the uterus it is necessary to restore the uterus to its normal position. When, in the cases of women, the mucosa has been entirely expelled, it is best to leave a sound in place and to wash the bladder with a small quantity of a disinfecting solution such as boric acid, potassium permanganate, or oxychloride of mercury. In cases in which the mucosa has been only partially expelled the sound cannot be left in place, but washing the bladder by means of a large sound may be attempted several times daily. If this fails, one may dilate the urethra, resect the vesicovaginal wall, or make an infrapubic fistula which will permit examination of the bladder and expulsion of the mucosa. When the diagnosis is definite but the mucosa has not been expelled, the procedure must be determined by the course of the disease.

In the male, the elimination of fragments of mucosa is less common than in the female. In severe cases circumscribed peritonitis and septicemia develop and life can be saved only by making an infrapubic fistula. The prognosis is more favorable for females than males.

The author reports four cases in detail. Two of the patients were children fourteen and three years of age.

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ing fluid. In nearly all of these masses a distinct vascular loop is apparent as the central structure.

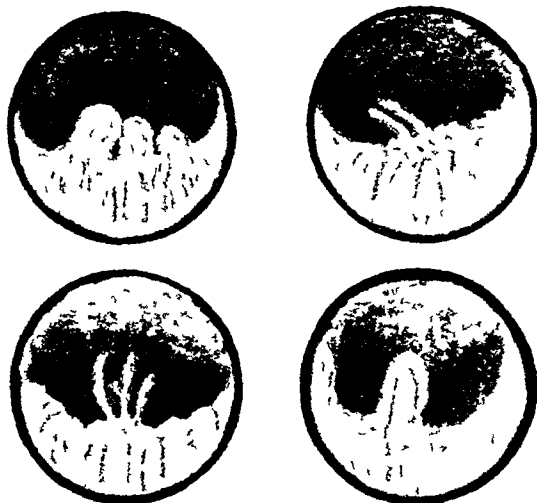
During an acute flare up the whole surface of the urethra is intensely red and small punctate spots extruding shreds of mucus and pus are seen. The bladder mucosa may also be inflamed, either diffusely or in discrete patchy areas.

The minute lesions of the early stages may be overlooked if a search is made for them only while the cystoscope is being withdrawn as the tug of the mucosa on the shaft of the instrument tends to smooth out the mucosa and thereby obscure them. If, after the window has been withdrawn into the lumen of the urethra, the cystoscope is gently pushed back into the bladder the small masses will be plainly visible.

As the irritation from the urethra may be transferred to a sympathetic nerve reflex, the pain may be attributed to the ovaries or tubes. In some cases the pain and bladder irritation have led to pelvic exploration and various pelvic operations which have failed to give relief. An illustrative case is cited. The author believes that many pelvic operations would be avoided if gynecologists bore in mind the fact that the urethra may cause not only the symptoms of cystitis, but also pain and discomfort in and around the pelvis.

In Folsom's opinion, many cases of so called stricture of the ureter have been relieved, not by the dilatation of the ureter, but by the dilatation of the urethra resulting from the passage of the cystoscope.

Histological and pathological studies have shown that the papillary masses have many rudimentary gland like structures and some of them have well-developed gland structures. These findings suggest that the masses themselves are adenomatous papillary structures and not mucous cysts or simply fibrous polyps. In many urethra examination has



Cystoscopic views showing masses and their arrangement in a clinical case

revealed a very definite group of tubular glands located around and opening into the posterior portion which, when infected, show all of the various changes presented by the prostatic ducts and tubules of the male. Folsom concludes that these infected glands are the cause of the various pathological conditions seen in the female urethra. He believes that as a result of the long-continued inflammatory changes together with oedema of the mucous membrane of this portion of the urethra, stretching of the inelastic tissues occurs with the formation of papillary structures. If this theory is correct, the masses are inflammatory rather than neoplastic formations.

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method espe l f p r b l tumors a j a
p e l u m a r y to o p e r a t u

7 Fle troco g l a t n f l l w e d b the pack g e f
h g h l y f i l t e d a d u m c a p s l s a g a s t h b e c f
the t u m o The auth o r g r e a t l y f o s t h p r d

Pf h l e r s e x p e r i e n c e n l d e g h t y t h r e a s e s
f a d a n e d l a g n p r a b l a r c i n m a t a of th
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s e v e n y a a d t h e r a g d t n o f t h d e s e
f i f t e n d t h t e n t h m t h s Th p r t i e w a s
v l e d b y t h p r m a r y b l a d d e t m r n f e c a s
W h i l f e y e a r e c o e r v s b t i n d e n o l s
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s e t o n f r a d m e d l n b e p l a c e d t
a d n a g b y h g h l y f i l t e r d r d m i t i t
f r m f m a l l p c k s t h u the b l a d d e E n o r a g i g
r u l t h s b e e b t a i d f m r d t l
c h t e t m t r l u t h p i n d h a m r t g

Louis N EL MD

F l m A I Th F m l U e t h r a - C l i c a l s d
F t h l o g i l s t d y J t m J f 4 93

345

Inflam m t n f i t h f m l e t h r s m n d t
c l o c n l l y b y b l a d d t a t o a f e q e t d e s
v o d a d b m g n d p n n u r i o n Th a
t h t s t h d l t r e c s The o n d u o n
i t n h s t r g n a n a t k f g b o a b t
t h t h o b l e e s i t a s f r q u e n t l y t h r e s u l t o f
s m e t h e r f c t o a h i g h e t h u r e t h f r o m t h
v u l a d g a p r h p a d u s t f o c u s

The t h e f p a t h l g i c a l c h a r a t e r i s t i c s f
h e r n f l m m i o n f the f e m l u t h r a n
w n g f t h r e t h r a l f m f o m t h a t a l
c n t a t u n f t h p e t h r a l t s d l l
d i f e d h g s n the m c o m m b r a c r o e n g
t h p u m f l h f of t h u e t h n d p a t i l l y
t h p a t c g t h p h e The c a l b r f i t h
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f t h t i t o f t d d t f m t z f

m t u m t 8 F d o c l l y t a d g r e e
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u Th g l s r e t h r t f q t h s
t h p h i t r a d s t t h b l d d m o s
d t h n t e n l a l o p e g Th s m l l

g p f g j b d e f t l y s t h t h
f t h M C t h y p n e n d p e I a d d u t h
t h m b s m l l c l u s t r s of c y s t f p h d s

g r p d f r q t h l l e l l e s r u n g l a g t
d n l l y l g t h m c a l f o l d T h t n t l
s o m f t h c y s t s a b w g l d g i n g t h

s a j l l h t n g l m a d n e d s t g
l l d f d p o l y p o d m e e h g n g l m
t h c a c u m l f t h p h t r T h e s a r y

d s h p r t h r d l y S m r s s s l
t h r s r p d l t e d d t h r s h w t h
t n s t c f p a p i l r y f d f t g l t h i n g a l

the pathological fractures of Paget's disease, Lasserre recommends mercurial or other anti syphilitic medication or calcium gluconate. Such fractures very seldom require operation.

KELLOGG SPEED, M D

Launay, C A Contribution to the Clinical and Biological Study of Charcot's Disease and Its Atypical Forms (Contribution à l'étude clinique et biologique de la maladie de Charcot et de ses formes anormales) Abst Thesis of Paris *Presse med*, Par, 1931, XXXI, 1422

This thesis is based on forty cases of amyotrophic lateral sclerosis studied at the Neurological Clinic of the Salpêtrière Hospital.

Relatively frequently early signs of the condition are vasomotor disturbances of the extremities. Certain forms of Charcot's disease for a long time clinically resemble pseudobulbar paralysis with diffuse pyramidal extension resulting in a tendency toward spasmodic laughter and crying, labioglossopharyngeal paralysis, progressive muscular atrophy, and fibrillary movements.

The author reviews the lateral sclerosis secondary to syphilis, lethargic encephalitis, and toxic infections and discusses their relationship to Charcot's disease. He states that the lesions produced by an infectious disease are combined sclerosis which, though sometimes causing symptoms similar to those of Charcot's disease, do not follow the rigidly fixed anatomical and clinical formula of the latter condition. Charcot's disease is characterized by a regular progressive evolution, a fatal outcome in a few years, and the absence of an apparent cause.

In conclusion the author says that his biological research has resulted only in establishing the differences between Charcot's disease and the infectious sclerosis.

KELLOGG SPEED, M D

Brunschwig, A, and Jung, A Experimental Research on Purulent Arthritis Caused by Staphylococci (Recherche expérimentale sur l'arthrite purulente par staphylococciques) *Rev de chir*, Par, 1931, I, 521

The development of aseptic purulent arthritis in the course of infectious diseases has been definitely demonstrated. Bacterial toxins have been held responsible but it has not been determined whether the staphylococcus is toxin forming or what lesions the toxin alone will produce in the joints.

While it is believed at the present time that certain filtrates of cultures of staphylococci may be toxic, it is not generally believed that the staphylococcus is able to produce a true exotoxin. Injections into the blood stream of filtrates of cultures from cases of acute staphylococcal osteomyelitis failed to produce osseous lesions, whereas intradermal injections of filtrates of bouillon cultures of staphylococci obtained from furuncles and anthrax pustules caused large areas of necrosis.

The purpose of the authors' investigations was to show that there is a staphylococcal toxin capable,

by its own action, of producing the lesions frequently observed in human disease and formerly attributed to the pathogenic bacterium alone. The experiments reported in this article were carried out with an attenuated non-hemolytic staphylococcus obtained from a man afflicted with furuncles. The organism had been cultivated for ten years in gelatin. To obtain the toxin, 100-cm flasks of simple bouillon with a pH of from 6.8 to 7.2 were inoculated with the organism and after the cultures had been kept in the incubator for seven days they were centrifugalized and filtered through a Chamberland L3 filter; the sterility of the filtrate was determined and the clear filtrates were placed on ice.

The experiments were carried out on twenty-seven rabbits from seven to eight weeks old. In the first group of experiments injections of the filtrate were made into the ear veins of three rabbits and into the right knee of two rabbits. Of the rabbits receiving an injection into the ear vein, one developed swelling of the knee with staphylococcal pus, one, multiple abscesses of the liver and an abscess in the left kidney, but no joint lesions, and one died within twenty-four hours but at necropsy presented no macroscopic lesions in either the organs or the joints. In the cases of the rabbits receiving an injection into the right knee, examination of the knee at necropsy seven and sixteen days later disclosed edema, a mucopurulent effusion, and a thickened, gray, and friable synovial membrane. The articular cartilage was macroscopically normal.

A second series of experiments showed the fatally toxic effect of large intravenous doses of the filtrate. Intravenous injections of small doses had no untoward effect.

A third series of experiments, in which intradermal injections were given, demonstrated that the filtrate did not contain substances capable of causing skin necrosis.

In a fourth series of experiments it was found that the filtrate injected directly into the knee could cause an aseptic purulent arthritis whereas the bouillon alone did not have this effect. The process of aseptic inflammation was confined to the synovia alone. The articular cartilage became somewhat dull, but showed no lesions. The authors ascribe the absence of cartilaginous lesions to the attenuation of the culture used. They believe that because of this attenuation the leucocyte destruction was not marked and did not free the large quantities of ferments necessary to cause disintegration of cartilage.

A fifth series of experiments showed that the toxic principle of the filtrate is relatively resistant to heat. The leucocidine described by Vandervelde is a thermolabile substance capable of profoundly altering the leucocytes, whereas the toxic principle in the authors' filtrate is thermostable and causes an effusion which contains intact leucocytes. The authors believe that a true exotoxin may exist in certain cases of staphylococcal infection, and they hope to find an efficient autostaphylococcal serum.

KELLOGG SPEED, M D

SURGERY OF THE BONES JOINTS, MUSCLES TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

S d t G The Co qu n s f l t rrupt n
f l C i c u l t i o n a n d f f r a c t u r e f t h e E p h
y l i n G w l g A n i m l (S u l l q d
t r u l t n d f a t t l l p f i d
m l m t) C h d s d m
m t 93 x 9

The auth r pot t l r e e r s f v p r i m e n t s
c r d o u t n g g d o g s t o f e t e m e t h e f f e c t
o f t e r p t n f t h e c u l t i t h e p p h y s o f
t h m t t r s a l s

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s o d e s a f r g m t f t c t l a g a s p a
r t e d f r m t h e h e a d o f t h m e t t a l a d m m e d
a t l y r e p l c e d I t h t h r d e s t h e t l i s
e m b e d b y c a n g a t a a r t i l f r a c
t n d s m l t a n s l y t e r r p t g t h e p p h y s e a l
c e u l t o n

A f t e c l r c t o f t h p s t e m a t t h k
o f t h m t a t a l c m p l t e n s o f t h b o e a n d
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m a d n m a d e b y p t p c s l d t
p e f c t e g e t n f t h e t r u c t r f t h e p p h y s
S e p r a t i n d m m d t e r p t n f f a g
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m e d u l l a n d f t h e f a g m e n t f b e b u t t h
f i l l w e d b y p f e c t e g n e t n f m t h m l
t u s o f t h p p h y s

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b y g e r l f t v d e g t f t h i t e f t h
e p p h y a o c a t d t h s p s t n f t h p e r i
a t l r t e s a d e d f m t y f t h h a d
f t h m e t a t r s l A F T V D

D a l T U n u f F m f F m i l l O t o c l
d o d y t p h f t a d l 93 337

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a s t a d b t h d n t h t f m h
h d a b t h e w i t h s a m c n d t i o T h d i s
h a c t r u z b d w f m p n b r a s t n f
k y p h o s f t h e p e b t t h e t m t a t
b l y l n g n d w l l d e e l p d T h m t m p t t
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b o d e s o f t h e e t b r a w i t h k y p h s a d l
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c h a g t h a h l d r d k j o t g t g
l c a l m a l T f t t h o a s p s e t i j
l s o f t t v d e l p m t f t h p p h y l c t r s

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carp l

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t p h y n d c h o d r o d y t r p h y H e s g g t t a t
f a m l l s t e o h o d d y s t o p h y s d u t b n r u a l
f a c t o g f t h e e n d o c g l n d a n d s t e r m d
a t e b e t w e e n a h n l p l s n d t h e l o c a l m l

L s C H y p e t p h l O t e p t h l s (L v
o t e p t h h y p t r o p h t) R e v d o r t h p 3
457

H y p r t p h t e p t h u s a d e f i d b y t h
u t h a c h o n d s u l l v s y t m a t u z e c a g n
b e f l e t g c h f t h e c m p e t s p o g t
e n d l e a d g t p e r p h e r l p l f a t s i n t h e
f m f h y p e o t o s p e r t e l n e w b o

A m g t h c r a n f l h y p e t r p t e s s l t s a
s e a O t e t h p t h s o f p u l m o r y g a r t
g p e d t h a o m g l c p t e a l h p r t p h
l g t d s a i d b e d p r g e s s i e s t
o p a t h y h r a c t i z d b y h y p r t p h y h h v l e s
m t o f t h s k l e t n a d p r t l a l t h l g b o e s
d k l l T h e a t l c l f m t h g n
l d a d t h m s u T h n d i n a s o f
s g a l t e s t c h f l y b c a u s f t h e c r r
f p t h i g l l c t u e s B h l g m a o c c r
I m d t h f b o d a m t c h g
r l t L s s e r r h a m a d e a t o m l t s
l g c a l n d h t i g l s t h e s f t h e h g i n t e
k u l l t e b r a e i l g b n s

I d i g t h r a f c l h y p t r p h o t e
p a t h e t h u t h c t e s t y c e f l e o n u s
w h c h h e f n d t h l t e a t e T h r e e t s
f t h c d t e g z d () t e d f f e
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f i l p t t n d (3) a l c a l e d o m o f t h e
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L r r e t t k e p M e s d s e s e (c r m g
l y) d t t n d t d e c r i b d b y L r n i n 9
n b r n d h p e t s u g d w t h e l e n g h
f t h c m p t f i g b e l k t h w k f
d l e H t p e a l l y t h c a f t h e l t t e r
d i t h h w p o t d b y P t t

I d g t h d f f n t a l d g t h e t h o r
d e s p e l l y p h l A p h y c h m a d
t h f t h f m f l y p t p h c s t e o p a t h
p l l y t e s b d n a l m a d p h
d t m t s u s a t i f c r y t g g t t t
l l f t h s e f r m m y b f d f n t l y f e c t o u s
r i g
I m t f t h c d t o n t h m t h o d s f t t
m t s o f m p l o y d h e b e u c c f f f

cured Eight were markedly benefited and two were considerably benefited by the operation One patient was operated upon only eight weeks before this report was made

Of chief aid in the diagnosis is the roentgenogram If this shows the shadow of a mass of bone which has been torn from one of the points of insertion, the diagnosis is certain If it shows no abnormal shadow mass it should be examined for an indentation at the points of insertion An indentation indicates that a mass of cartilage has been avulsed at that point The chief clinical sign is subluxation of the tibia on the femur In the author's thirteen cases this was found six times In two cases it was found without roentgen examination Sometimes both clinical and roentgen findings are absent, the condition being manifested only by hydrops and inability to extend the joint completely In such cases the ligament is seldom torn completely loose In two cases in the author's series only a portion of the anteromedial, upper bundle of fibers had separated These were rolled up into a spherical mass After the mass had been removed and the raw area thus produced had been sutured over, complete healing resulted in from seven to nine weeks

Pav's medial S shaped incision is recommended for the operation When possible, the author uses the simple tucking suture of Pfab or the method of Gold in which a pedicled fascial strip is passed through a drill hole in the tibia and sutured to the point of insertion on the femur The most conservative method is that of Eickenburg for reconstruction of the posterior crucial ligament In this procedure a strip of fascia lata is passed through a hole drilled in the tibia and then through a hole in the femur Fascia lata has proved to be most reliable The suturing is done with silk Nailing and wiring are inadvisable

In five of the author's cases the injury was due to sports, in four it was an occupational injury, and in five it was due to a transportation accident At the time of operation the injuries were from one week to four years old The roentgen findings were positive in five cases The subluxation sign was present in six In four cases the dislocation occurred in a forward direction and in two it was backward In five cases the laceration of the crucial ligament was accompanied by injury to the medial meniscus The most frequent injury was avulsion of the anterior crucial ligament from its tibial attachment In one case in which arthritis was present before the injury it was improved after the injury, but in another case of similar character it became worse STEFFNER (Z)

Trues The Treatment of Congenital Equinovarus After the Second Year of Age (Traitement du pied bot varus equin congenital apres deux ans) *Re d'orthop* 1931 VIII, 593

This article reviews the historical development of the treatment of congenital equinovarus

The treatment consists essentially in correction of the deformity and the displacement of the astragalus

The astragalus must be remodeled and re aligned in spite of ligamentous, tendinous, and osseous obstacles Orthopedists attempt to preserve it as much as possible In the cases of young infants, operation is rarely indicated Orthopedists usually correct the deformity by manipulation supplemented, if necessary, by a delayed minor surgical procedure which is generally subcutaneous

After about the second year of age the period of only relative irreducibility is passed, the astragalus extrudes from its normal position in the tarsus, often closely followed by the os calcis Up to the age of eight years the deformity may still be considered as more cartilaginous than bony, and the foot may still be overcorrected without disturbing the joints To narrow the astragalus and lower it beneath the tibial surface open operation is required For the prevention of recurrence of the varus and supination, the removal of a wedge of tissue from the outer aspect may be advisable

After the seventh or eighth year of age the sacrifice of bone becomes necessary When the amplitude of the movement of the tibiotarsal joint is satisfactory, double vertical osteotomy is preferable to arthrodesis, especially midtarsal arthrodesis Particularly in the cases of adults, complete astragalectomy is often necessary

The author reports in detail the cases of nine patients ranging in age from four to thirty-three years
KELLOGG SPEED, M D

FRACTURES AND DISLOCATIONS

Bloch, J C, and Guthéneuc, O The Treatment of Recurrent Dislocation of the Shoulder by the Modified Oudard Operation (Du traitement de la luxation récidivante de l'épaule par l'opération de Oudard modifiée) *J de chir*, 1931, XVIII, 333

Oudard's operation, which consists essentially in the formation of a pre articular block by lengthening the coracoid, has been eminently successful

The original technique published in 1924 called for a reversed L shaped incision with resection of the deltoid muscle 1 cm from the clavicle, transverse section of the coracoid process, opening of the joint by resection of the subscapular muscle and the joint capsule, and lowering of the extremity of the coracoid process and of the muscles inserted into it The subscapular muscle was shortened by plication and a block formed by lengthening the coracoid process with the help of an interposed tibial transplant

In a technique proposed by Oudard in 1925, the tibial graft, which took a long time to heal, was replaced by longitudinal splitting of the coracoid process and slipping down of one fragment on the other In fifteen cases in which this method was used there was no recurrence

A third modification consisted in the use of an osteoperiosteal graft after longitudinal splitting of the coracoid process

The authors suggest a fourth technique They believe that resection of the deltoid muscle is unwise as

Nowi kl S Expe tme t l A th itl Def rm ns
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G p T x r M D

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f t S t 93 xi 709

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SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

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m y p l y p a t n t d e v l o p m t A m o t h
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S c h n e k

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The u f r u n d o s q n d l f r t h t m a l
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n u g h a d y e d t a d t h t o f f t
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d t a g s a l v s d e v e d w h c h b r g b t
b l t e f i t l l d i e c t i o n d i s p l a m m o
m u m a m u t f b o n g r p t h c t e o f t b o
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i g a l S m t h l e t e r n n c I t i s m e t
s t h n t b l t t r a d g f e c c t t h e b p
j n t

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c l e f t h d d n b t h e l m e t h o d

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f a l t t t o d t f t h e l t l a s a o b
t t l f p f r g p g t h k o f t h f m

after the fracture has been reduced, an instrument somewhat like an old fashioned corkscrew which is used to withdraw the nail when the aim has been faulty, a flexible steel measure with a slide which is used to measure the distance from the femoral joint surface to the base of the trochanter so that the nail selected will be of the right length, and the nail. The nail is made of rustless steel and has three flanges. The flanges are $\frac{1}{2}$ in thick and from $\frac{1}{4}$ to $\frac{1}{4}$ in wide and make an angle of 120 degrees with one another. The length of the nail varies from 2 $\frac{1}{2}$ to 4 in.

The postoperative treatment consists of suspending the affected extremity and applying traction of 5 lb. This allows the patient to move around in bed and begin function earlier. Exercises are prescribed at first for the knee and foot and at the end of two weeks for the hip. At the end of three weeks a bivalved short plaster spica is used for walking only. Because of the abducted position, weight bearing can be undertaken safely since in this position it has no tendency to distract the fragments.

Weight-bearing is not always possible at the end of three weeks. Its advisability depends entirely on the patient's condition. In cases in which expense need not be considered, a jointed leather spica is used. A support in the form of a plaster or leather spica should be used for a period of from three to six months, depending on the rate of repair shown by the roentgenograms.

Removal of the nail has been undertaken after intervals varying from six months to four years. This is a very minor procedure and does not disable the patient. When the roentgenograms show bony union, the nail has ceased to function and there is no objection to its removal.

In the series of cases reported by the authors the postoperative reaction was slight. At no time was there any need to resort to shock measures. The absence of shock is attributed to the non traumatic approach. The absence of pain after the operation was very striking.

The authors report twenty four cases in which the method described was used. In four, the end result was not recorded for reasons beyond the authors control. In the remaining twenty cases the result was bony union in fifteen, non union in three, and death from sepsis in two. The ages of the patients ranged from twenty to ninety years. The majority of the patients were between fifty and seventy years old.

In the fifteen cases of bony union excellent functional results were obtained. The three cases with non union were treated during the first two years when the technique of the operation had not been developed to its present stage and when the efficiency of the method had not been definitely proved.

The authors draw the following conclusions:

In the treatment of joint fractures, anatomical reduction and early function are the two chief objectives. Heretofore, the different methods of treating fractures of the neck of the femur have met only

one of these requirements. Anatomical reduction has been achieved in the majority of cases, but early function has been impossible. The internal fixation of the fracture brought about by the three-flange nail is absolute in all directions and is well sustained. Because of the absolute, sustained fixation, postoperative immobilization is unnecessary and early function is possible. Early function favors bony union and better ultimate function.

H. EARLE CONWELL, M.D.

Camitz, H. The Pseudarthroses—in Addition to Probable Preliminary Stages—Following Medial Fractures of the Neck of the Femur and Their Treatment (Die Pseudarthrosen—nebst wahrscheinlichen Vorstadien—nach medialen Frakturen des Collum femoris und deren Behandlung). *Acta chirurg. Scand.*, 1931, LXXIII, Supp. XIV.

Recently surgeons have found a satisfactory conservative method of treating fractures of the neck of the femur. The requisites for success are a perfect plaster technique and the most extreme care in reduction. However, not all recent fractures are curable no matter how great the care or how good the technique. Pseudarthroses will always occur after medial fractures of the neck of the femur. It must be borne in mind that these fractures occur most frequently in persons with senile changes such as arteriosclerosis, myocarditis, and emphysema. The method used must involve little risk and must be easy to carry out, and the duration of the plaster treatment must be as short as possible. Subtrochanteric osteotomy meets these indications well, but must be varied according to the conditions present in individual cases, especially when resorption of the neck of the femur has occurred. In many cases of pseudarthrosis the hip joint functions satisfactorily, the patient walks practically as well as before the accident and is free from pain and able to work. Such cases should be left alone. When there is difficulty in walking, the best procedure is subtrochanteric osteotomy.

As a rule the head of the femur receives its blood supply from the ligamentum teres as well as from the cervical synovia and the vessels running in the neck of the femur. Often the blood supply from the ligamentum teres is sufficient to prevent necrosis of the head after a fracture. When this is not the case and the cervical synovia is completely ruptured, necrosis of the head of the femur results. When the cervical synovia is only partially destroyed there may be no necrosis or only partial necrosis, depending upon the extent of the injury and the site of involvement of the cervical synovia. If the blood supply is such that only a slight or moderate necrosis of the head results and reduction is properly effected, all of the conditions necessary for consolidation by growth of the marrow callus from the distal to the proximal fragment are fulfilled. Degeneration of the articular cartilage is rare. The chief causes of pseudarthrosis after medial fractures of the neck of the femur are (1) a lack of periosteum on the

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cases, to practice simple reduction, fix the fragments in place by two simple catgut sutures, if necessary, and apply a plaster cast. The authors believe that osteosynthesis should be minimal in compound fractures.

The advisability of primary suture still remains a problem. This procedure has many advantages, but sometimes results in infection. It should be used only when operation is performed early, the muscles are in good condition, and perfect hæmostasis is obtained. Plaster immobilization may lead to contamination of the wound. Precautions should be taken to prevent pressure, and the plaster should be sterilized by the addition of formalin. Plaster troughs should not be used in cases with extensive muscle contusion or injury of a large vessel. In the presence of contra-indications to plaster immobilization or danger of secondary displacement of the fragments, continuous extension should be employed. Transfixation of bone for extension is not done as frequently in France as it should be. In cases of multiple injuries suspension combined with immobilization may be of great value. The authors divide compound fractures into five groups according to their severity. The treatment ranges from expectant measures to amputation. AUDREY GOSS MORGAN, M D

Benedetti-Valentini, F. The Pathogenesis and Treatment of Isolated Dislocations of the Astragalus (*Considerazioni sulla patogenesi e sulla terapia delle lussazioni isolate dell'astragalo*) *Polidini*, Rome, 1931, LVIII, sez. chir. 525

The author reports the case of a man twenty-three years old who fell from a scaffold and experienced intense pain in his right foot on striking the ground. After the accident the foot was in a position of extreme dorsal extension, abduction, and external rotation. On the inner surface there was a large round swelling over which the skin was so stretched that it appeared ready to break and was dotted with ecchymotic spots. On the external surface, immediately beneath the malleolus, there was an indentation. Palpation was extremely painful. Any attempt at active or passive movement caused intolerable pain. The swelling was evidently the dislocated head of the astragalus. As non-operative reduction was impossible even under anaesthesia, operation was necessary.

A curved incision about 15 cm. long was made on the inner surface of the ankle following the direction of the posterior tibial tendon to the tubercle of the scaphoid. As soon as the skin was incised the head of the astragalus protruded. Dissection of the tendons and ligaments of the region showed that its irreducibility was due to the fact that it was surrounded by a band made up in front of the posterior tibial tendon and behind of the tendon of the flexor longus digitorum pedis. In order to act on the head of the astragalus it was necessary to open the sheath of the former throughout its extent. A blunt lever was introduced under the head of the astragalus and the head put in place. Reduction was interfered

with at first by fragments of the lacerated astragaloscaphoid ligament which lay in the navicular fossa. After reduction had been accomplished the sheath of the posterior tibial tendon was sutured and the tendon replaced in the retromalleolar groove. The astragaloscaphoid ligament was then repaired as far as possible and the wound closed by a row of aponeurotic and ligamentous sutures and a row of skin sutures. The foot was immobilized at a right angle. A roentgenogram showed perfect reduction.

When a window was made in the cast eight days later for removal of the skin sutures the wound was found healed by first intention. The patient left the hospital anatomically and functionally cured about a month after the injury. He was not given any special physical or mechanical treatment except slow and gradual exercise.

The author discusses the experiments done on cadavers by various investigators to determine the mechanism of solitary dislocation of the astragalus. This dislocation is very rare, the author has never seen a similar case. He does not believe that the force of the weight of the body can displace the astragalus from its firm bed without injuring or displacing adjacent bones. He calls attention to the fact that the experiments cited were not performed under natural conditions as the ligaments were cut. He is of the opinion that the dislocations are brought about by violent reaction of the muscles to the pain of the injury. If the anterior muscles of the leg react violently and the tonus of the antagonistic muscles is deficient, the action is that of a lever of the second class, these muscles representing the force, the bones of the leg the fulcrum, and the astragalus the resistance. If the posterior ligaments are lacerated and the posterior muscles react violently, the action is that of a lever of the third class.

As non-operative reduction is generally impossible, immediate operative reduction is indicated. The results are much better if the astragalus is preserved than if it is sacrificed.

AUDREY GOSS MORGAN, M D

Bianchi, G. A Contribution to the Study of Fractures of the Bones of the Foot (*Contributo allo studio delle fratture delle ossa del piede*) *Chir. d'organi di movimento*, 1931, XVI, 553

The author studied 200 cases of fracture of bones of the foot with regard to the mechanism of production and type of the fracture and the results of different methods of treatment. Fractures of every bone in the foot were encountered. Most frequent were fractures of the phalanges, and next most frequent, fractures of the metatarsals and fractures of the calcaneum. The numbers of the latter were about equal. Least frequent were fractures of the sesamoids.

More or less satisfactory reduction of such fractures is possible. The state of the joint involved may be determined by passive movement. The trophic condition and the tonicity of the muscles indicate the functional state of the muscles and constitute

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SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Maggio, P. The Structural Changes in the Venous Coats in Varices (Sulle alterazioni strutturali delle tuniche venose nelle varici) *Sperimentale*, 1931, lxxxv, 185

The author studied varices in different stages and from persons of different ages. He found two types of lesions which he shows by six figures in the text. One type occurs in the middle layer and the other in the inner layer. The first lesion starts with changes in the muscular fibrocellular layer which shows changes in its staining reactions. Later the cells undergo more marked nuclear and protoplasmic changes and at the same time there is a disordered increase in the connective tissue and elastic fibers. As a result, the vessel appears thickened but has a narrowed lumen. In this stage of change the intima takes no active part. In the more advanced stages the characteristic deformity of the vein occurs in which it is impossible to differentiate the various layers.

In varices of the second type the changes begin in the inner layer where there is subendothelial proliferation of connective tissue. Slight changes take place in the media and adventitia. Later the proliferation in the intima decreases the lumen of the vessel. In the later stages the intimal tissues undergo degenerative changes which are simultaneous with changes in various parts of the media and adventitia and result in a non-uniform thinning and collapse of the venous walls. In the advanced stages there remains no trace of the various tunics whereas in the intermediate stages, traces of them may be detected.

Maggio does not believe that one of these lesions is the forerunner of the other. He regards all as the result of the same process which is probably of a toxic nature and due to chemical changes in which a hormonal factor may play a role.

EUGENE T. LEDDY, M.D.

Horn, O., and Foged, J. The Risk of Embolism in the Injection Treatment of Varices. A Clinical and Experimental Study. (Embolierisiko bei Injektionsbehandlung von Varizen. Klinisches und Experimentelles) *Uitd. d. Grensgeb. d. Med. u. Chir.*, 1931, xii, 400. *Ugeskr. f. Læger*, 1931, 1, 625.

The basic principle of the injection treatment of varices is that the injection of certain substances into the vein produces a lesion of the intima on which is gradually formed a thrombus attached closely and in time organically to the vessel wall. Hence the fluid chosen for the injection must be suited to this purpose. It should not be Pregl's solution nor a so-called blood coagulating fluid. Embolism is sup-

posedly caused by complications. Ascending inflammation of the vein apparently plays no role in its development.

The authors report a case of loosely attached thrombi with fatal pulmonary embolism. The loose attachment of the thrombi was found to be due to marked syphilitic changes in the liver. Insufficiency of the hepatic tissue appears to cause a considerable reduction of the fibrin in the blood and, as a result, defective thrombus formation. On microscopic examination of sections of the thrombi in the case reported the amount of fibrin was found to be extremely small. A deficiency of fibrin in the blood (hepatic insufficiency and polycythemia) must be regarded as contra-indicating the injection treatment of varices.

At the end of the clinical portion of their article the authors describe the technique of the injection treatment. Puncture is done with the patient standing, and after aspiration of blood the injection is made with the patient seated while an assistant wipes away the blood on each side and uses finger pressure to occlude a segment of vein about 10 cm. long. The injection is followed by compression with tampons and massage with maintenance of the occlusion for about five minutes.

The after treatment is ambulatory. Bandaging is not used. Recurrences may develop, but occur at most in only 10 per cent of the cases.

In the experimental part of the article the authors report sixteen experiments on horses in which a 30 per cent solution of sodium salicylate or a 60 per cent solution of inositol was injected intravenously. Ten minutes after the injection no signs of thrombosis were demonstrable. After from nine to forty-five days, autochthonous thrombus formation was present in all of the animals. In every instance the thrombus was strongly adherent. The phlebosclerosing and thrombosing capacity of the two fluids injected was the same.

SÖNNTAG (Z)

Kettel, K. Deaths After the Injection Treatment of Varicose Veins. A Review of the Literature. (Ueber Todesfälle im Anschluss an die Injektionsbehandlung von Varizen. Eine Literaturübersicht.) *Zentralbl. f. Chir.*, 1931, p. 1498.

In the majority of more than 1,000 cases in which varices were treated by injection the results were very good, but there are records of 20 deaths after the treatment. The "aseptic phlebitis" resulting from the injection may become complicated by infection and secondary coagulation thrombosis. In 4 of the 20 fatal cases the exact cause of death was not determined. In 5 of the 16 other cases, death was due to a condition not associated with pulmonary embolism, in 2 to sublimate poisoning in 3 to sepsis,

criteria of operability. Recovery of function depends upon the nature of the fracture and the age of the patient.

In the scapula the most serious fractures are those of the body and neck. In fractures of the lower end of the humerus the articular surface of the body is involved. In the scapula isolated fractures may occur in the body, the tubercle. Removal of the fragments of the entire bone may be necessary. Removal of the entire bone often gives rise to non-union. Galenaiform thrombosis. Old undischarged fractures may result in painful valgum which may be reduced. In the acetabulum a fracture of the body is often partial and accompanied by fracture of the body of the foot. Roentgenograms of these fractures may be interpreted or directly by use of the presence of suppurative abscess in the vicinity of the cuboid. Fracture of the cuboid forms causes localized painful swelling and ecchymosis.

metatarsal toe to the metatarsal necessary for definite diagnosis.

Metatarsal fractures which we report as compound, dislocated, have benefited by treatment. Distraction of the plantar apophysis with production of a false joint with valgus position of the foot is noted. Fractures of the phalanx are considerably in type. Treatment by immobilization usually gives good results with quick recovery.

Fracture of the sesamoid may result in union of one metatarsal. The diagnosis is made by roentgenogram. The prognosis is usually good but sometimes the union of the bone is indicated.

The findings in these series are well tabulated and the principles of treatment are shown. For the bone is indicated.

The findings in these series are well tabulated and the principles of treatment are shown. For the bone is indicated.

A. F. T. M. D.

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE, POSTOPERATIVE TREATMENT

Meyer, A W Another Successful Operation for Pulmonary Embolism (Eine weitere—meine vierte—erfolgreiche Lungenembolieoperation) *Deutsche Zeitschr f Chir*, 1931, CCXXI, 586

The author reports a successful Trendelenburg operation for pulmonary embolus in the case of a woman seventy eight years old who was suffering from emphysema, arteriosclerosis and marked senile cardiac changes. The operation was performed twelve days after a fracture of the right acetabulum which was treated by extension.

Attention is called to the advantages of the new clamp for the pulmonary artery which, in the case reported, was applied after three minutes of digital compression of the slit without the use of the dilating forceps. The clamp is bent at an angle and is made thicker at the free end so that it cannot move any farther.

SIEVERS (Z)

ANTISEPTIC SURGERY, TREATMENT OF WOUNDS AND INFECTIONS

Reimers The Effects of Incision upon the Physico-chemical Picture of Inflammation (Die Wirkung der Incision auf das physikalisch chemische Bild der Entzündung) *Zentralbl f Chir*, 1931, p 1451

Infected glass tubes were sutured beneath the skin of dogs, and at the period of greatest inflammation, incisions were made. The reaction, the buffer value, and the protein content of the inflammatory exudate were measured continuously.

After wide incision the reaction changed greatly toward normal within a half hour. In the next four to six hours it rose again and remained moderately acid. After twenty four hours it fell approximately to that of the blood. The buffer value changed in reverse. The protein content showed a slight fall toward the normal in the first hours and then a considerable increase. After twenty four hours it rose as high as 10 per cent. If the incisions were inadequate the changes were less marked.

The effects of the incision are caused by the inflowing of blood serum into the strongly acid inflammatory area and the escape of inflammatory products.

KOTT (Z)

ANÆSTHESIA

Rowbotham, S Premedication *Brit M J*, 1931, II, 693

The author discusses pre anesthesia medication. In the use of paraldehyde he divides the patients into four groups and varies the treatment as follows:

Group 1 Children under seven years of age and debilitated or severely toxic subjects. One dram of paraldehyde per 14 lb of body weight is given by rectum three-quarters of an hour before the operation. Each dram of paraldehyde is dissolved in 10 dr of warm saline solution. If the patient becomes unconscious during the administration of the drug, it is stopped at once.

Group 2 Normal adults and children over seven years of age. One-fortieth grain of morphine per 14 lb of body weight is administered one and a quarter hours before the operation and followed after fifteen minutes by the dose of paraldehyde given in cases of Group 1.

Group 3 Alcoholics, athletes over twenty five years of age, patients who are very nervous. A full dose of bromide and chloral is given the night before the operation. Morphine and paraldehyde are administered as in the cases of Group 2, but from 1/150 to 1/100 gr of hyoscine is added to the morphine.

Group 4 Thyrotoxic patients. The patient is tested to hyoscine. Chloral, bromides, and morphine-hyoscine are given as in the cases of Group 3. As it may be necessary to employ ether, the paraldehyde is dissolved in olive oil and this solution is used. If the patient is awake half an hour before the operation, from 1/2 to 2 oz of a 50 per cent mixture of oil and ether is instilled in the rectum. Sometimes retention of the mixture is aided by a 10-gr suppository of chlorotone.

Avertin is contra-indicated by diseases of the liver, kidneys, and rectum, and by advanced pulmonary tuberculosis. Its use is rarely followed by restlessness or vomiting.

The barbiturates may be given by mouth or intravenously. Intravenous administration is more accurate and certain than oral administration. When morphine is given the action of barbiturates is increased and smaller doses produce unconsciousness. As a rule the systolic blood pressure is lowered from twenty to thirty points or more after the intravenous administration of a barbiturate. The barbiturates are probably broken up by the liver and excreted through the kidneys. The three most commonly used are amytal, nembutal, and pernocton. All act quickly, but nembutal and pernocton are twice as toxic as amytal and hence act much more quickly than the latter. These drugs should be given intravenously and in the minimal dose required to produce unconsciousness. As a rule very little anesthetic is needed. Vomiting is very rare, and recovery usually takes place in from two to six hours.

The author prefers paraldehyde or nembutal as a basal narcotic.

FRANK B BERRY, M D

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HO ARD A M K HT MD

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ELIZA TH CRA STO

medication and local agents are used, or the pressure and concentration of the nitrous oxide are increased. The last procedure further reduces the percentage of oxygen in the mixture and adds an asphyxial element, carbon dioxide, to the blood.

Factors which may be responsible for difficulty or danger in nitrous oxide anaesthesia during the operative period are

1. Apnoea which may result in respiratory failure. This must be prevented by adding carbon dioxide to the mixture of gases.

2. Anoxaemia and an anoxidative state of the tissues. The amount of cyanosis is not an accurate index of the degree of these conditions.

3. The effect of anoxaemia on the heart muscle. The danger of cardiac failure renders necessary the use of an apparatus capable of instantly correcting an overdose, great care in the induction of the anaesthesia, the most alert attention during the whole

operative period, and reduction of the total duration of the anaesthesia to the minimum.

4. The complicated character of the apparatus. During the post-anaesthetic period uncompensated acidosis is of great importance. When anaesthesia is induced with nitrous oxide oxygen, the danger of this complication is less than after anaesthesia induced with other agents because of the rapidity with which changes in the depth of nitrous oxide anaesthesia can be effected. Nitrous oxide oxygen anaesthesia is associated also with less postoperative vomiting and less danger of respiratory complications.

The author concludes that nitrous oxide oxygen anaesthesia may be employed in a large variety of cases without other agents, and that neither practically nor theoretically can a carefully controlled anoxaemia be regarded as a contra-indication to its use.

J EDWIN KIRKPATRICK, M.D.

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Edm S Moor.

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genes in the four pairs of chromosomes of the fly, *drosophila melanogaster*. Moreover, in crossbreeding they noted many variations from the usual genetic behavior of the chromosomes. In 1927, Muller added another important fact when, by roentgen irradiation, he was able to increase the so called rate of mutation 150 times. In this way the danger of the X-rays to inherited characteristics became apparent. All gynecologists thereupon admitted the possibility of injury of the germ plasma fertilized early after irradiation. Some of them have recommended a period of abstinence after roentgen irradiation and others the interruption of pregnancy occurring early after irradiation. In the author's opinion it is more advisable for the physician to protect the ovaries from irradiation during the reproductive period of life. Even when pregnancy occurs late after irradiation, inherited injury is possible. Many gynecologists and students of heredity have

issued warnings. It has not been proved that the less mature female germ cells are not susceptible to mutation. Stadler's investigations show that when a sufficiently large dose is given mutations may occur in resting seeds. However, the exact dose which is necessary to cause hereditary changes in the resting primary follicles of human beings is not known.

The author does not accept the conclusions drawn by Nuernberger from his experiments with *drosophila* nor does he agree with Stieve who doubts that the X-ray causes hereditary disturbances. He emphasizes the possibility of injury to the fetus from irradiation even when pregnancy occurs late after irradiation, and states that in his opinion X-ray irradiation of the ovaries during the reproductive period of life is unnecessary. He believes that as long as our knowledge is uncertain we should place the welfare of the individual after that of the germ plasma.

HANS O. NEUMANN (G)

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

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cially marked resistance in the young animals. The resistance was as great to infection of the cornea as to encephalogenic infection. Jirman selected the cornea as a field of study for the following reasons:

1. Experimenting on the cornea of rabbits is the oldest method.

2. Grueter's experiments on the cornea are the only undisputed test of the herpetic form of an infection.

3. On account of the anatomical structure of the cornea, changes in this part of the eye can be observed very accurately.

According to the author's experience, the ocular affections appeared partly in the form of vesicles and partly in the form of keratitis dendritica. They were always associated with marked reactions of the conjunctiva, and sometimes with severe reactions of the iris. They healed with scar formation or were followed by disease of the central nervous system.

The findings of studies made by the author to determine the routes by which the herpetic virus penetrates the organism of the rabbit are summarized as follows:

In some cases the inoculation of the herpetic virus into the skin of the rabbit produced a herpetic eruption at the site of the inoculation. In others, it resulted directly in a herpetic encephalitis without any previous eruption at the site of the injection. Certain negative results may be attributed to the resistance of the particular animal. The inoculation of the herpetic virus by the subcutaneous or intraperitoneal route did not produce an eruption at the site of inoculation, but the injection of a very large amount of the infectious material (more than 10 c cm of an emulsion of herpes encephalitic tissue) caused a typical herpes encephalitis which ended either in death or recovery. The inoculation of the herpetic virus by the intravenous route always showed positive results, that is, it was always followed by an affection of the central nervous system, the herpetic nature of which was demonstrable. In no instance was a local herpetic eruption observable upon the skin, the cornea, or the visible mucous membranes. The infection by mouth never caused either local or general symptoms of disease. Negative results were obtained also in the experiments in which the virus was introduced by the nasal route, but if the mucous membranes were traumatized, the results were positive. Inoculation of the herpetic virus into the various parenchymatous organs produced only herpetic affections of the central nervous system, and never characteristic anatomical changes at the site of the inoculation. Experiments in which the virus was introduced by the subdural route were always positive. In every case involvement of the central nervous system followed. Similarly, attempts at inoculation into the peripheral nerves always produced positive results.

On the basis of his large number of experiments the author was able to study the disease in rabbits in detail as regards the anatomy and histology. He classifies the disease of the central nervous system into the

typical or classical form, the paralytic form, the form with indefinite symptoms, the latent form (Remlinger), the cachectic form, and the chronic form. The histologicopathological changes in the brain of rabbits with encephalitis were very slight. A striking feature was the marked difference between the clinical symptoms and the histological findings. Not once was it possible to demonstrate changes which could be designated as characteristic of a herpetic brain affection. For the recognition of the herpetic virus, the experimental inoculation of rabbits by Grueter's method still remains the only satisfactory procedure. In addition to the characteristic eruption and the involvement of the central nervous system, the animals showed a reaction of the entire organism in the form of an increase in the body temperature. In the author's opinion, the existence of the herpetic virus in the blood and the possibility of producing infection with the virus by the intravenous route show that the herpetic virus spreads in the diseased organism by way of the blood stream. There are no grounds for the assumption of dissemination by way of the nerve routes, but the possibility of transmission by way of the perineural lymphatic spaces cannot be excluded.

The morphologicobiological investigations have shown that the herpetic virus is not demonstrable either by optical methods or by known methods of preparation. The author believes that the forms described by Lipschuetz as "inclusion bodies" are oxyphile products of regenerative processes that take place in the cell nucleus. Filtration experiments have shown that the herpetic virus passes through porcelain filters. It has been impossible to obtain cultures of the herpetic virus in ordinary bouillon or in special culture media under either aerobic or anaerobic conditions.

The author conducted experiments also with regard to the effectiveness of different dilutions of the solution from extracts of encephalitic brains. He gave subdural injections of the diluted solutions. An injection of 0.2 c cm of a 1:10,000 solution showed that this dilution was beyond the limits at which the virus has pathogenic properties. In a 50 per cent glycerin solution the herpetic virus remained fully virulent. In this solution it was possible to keep herpetic material virulent for ten months.

In experiments to determine the effectiveness of disinfectants (absolute alcohol, ether, mercuric chloride in solutions of 1:100, 1:500, and 1:10,000, carbolic acid in solutions of 1:100 and 1:1,000, and antiformin and potassium permanganate in a solution of 1:1,000) it was found that the relatively weak permanganate solution was the most effective and destroyed highly virulent material within two hours. The antiformin had the same effect, but cannot be used in diseases of the cornea.

The author investigated also the dissociation of the encephalotropic and dermatotropic elements of the virus which has been demonstrated by some investigators. According to his experiments, the so-called dissociation is a biological phenomenon which can

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

King E J and H H G E Hypervit min
Co d M t J 93 xv 535

A J g and H H discuss hypervitaminosis in his k ens They found that massi e d es f v ste ol adm nistered to h ckens prod c d a re s l ss f w ght e t eme em ciation a d f ally d th Hypercalcemia ce rr d nd histol gical xam na tion d l d heavv dep st f calc m n th se etory tub les of the k d eys H t l g cal e am nat o of the fem r ho ed th mat i f th tr becua t b orm l b t s ggested a low calci m dep t w th n t Th pe c t ge f a h calci m and phosph rus the bones w r mal The bon ph sphatase ppea ed to be p esent i l s th the n rmal mount

Th daly dm n i trat n of pa thorm e e m d t have ll ffects compa ble to those p d c d by vioster l H st l g cal am n tion f th fem a sho ed p odu t i fibro s f the b ny t bec l e thought e ide t deposi t f alci um salts n the hyperpl sti t The m e r l st tuent and the ph phata f the bone w e p se t n norm l am nt F ABERN Cn s

B t l r V B rd J W d Blalock A E pe i m nt l Shock M A st dy f th Alterati ns In th V l m f Blood d In tl Wat Cont nt f Blood d f M sci Th t Ar Prod ced by H t min f h S g 93 xi 848

Th auth sst died the eff ct f h t m h k the bl d and tiss e fluids f d g s Th y f und dect e in the w ter nte t f th blood and m le the l me f blood d pla ma a d th blood chl d d n ncr se n th h mogl b nd red c lls These f ct m l r t th produc d by the m v l f blood pla m

M H R E B RKE MD

Johnson G S., d Bl l ock A E pe im t l Shock M A st dy f th Effect f Haem h g f Trau m to M sci f Tra m t th Int cl es f H m d f H t m l n the Ca d l c O p t d n Blood P es re of Dog t h S g 93 xxi 85

D term t f the ca l o tput nd blood pres u e mad expe m t d g st du e th nt t g ge t f hock tra ma hem th ge db r f h m h g d v r i us types f tra u m ca duac o p t d cr ased first d th blood p es u d cre sed l te Wh hist m w injected the blood p ess decl ed first and th cardiac outp t dect sed l te M

though t ss e damage and n o s occurred, the auth s ncl d that evid c of th anti a action f histam n th p od ct n of tra mat h ck w s f d in the r xperme ts

M HERB BA KEE MD

Jl m n J H pe Simple d H rptet Viru Tb Clinical Cou An t my Etiology d P tho g l of th Di ease d the B ology f lter petic Viru (H rpes m pl d H r p m D Kl k d A t m di A t l g d P tho ges d K kh t d d e B l m des H rpes ru) Ce k d D m t 93 xi

The m st v r y r g forms of herpetic erupt ns ar o n t r d phth Imology Am g th diseases of th conj nct a the e is a peculiar f r m th g anul s c la appe ra ce wh h s ggests tra ho ma but s ur den with diff ent th rapy f te d ys Th th r w s a blet sol t th h rptet f om th ru pt

Of the h p t c d s as of the cornea k rau d c f r m s s t be d fferent at d f r m e ula k att i h rptet cul er f th c r m a d d e t k att i k att i s d s f m s m y h e h rptet t logy b t some disc d f m m a t o s e f herpetic rign The th r doe not ge e th J r g a d th h rptet et l g y of Moore ul er o w th S h n y d rega d g th e do th l al aff ct n f th c rnea wh ch h call po terno herpes of th or The pe me ts f Gru ter h w hat d sease f the m the h rptet c v r us pe t tes the nte or hamber and m y fav r p thorge c p o es e n th t of th ns

The vi w of n S ly that th r s a relatio h p bet e h rptet i r us d symp thet cophth l m s o t held by the th r All a m l e p e m ns carned utt pr eth e h negati e result

I r e t t m th h pet vir has b n co d ed th ca se f umb of d se esth t l g f wh h h h r t f e b e n nk w

Imm nity t a qu d f o m a p e v us ge enl r e g n h rptet c d s e The a tho ble to dem trat th p es of h rptet c v r us n t nly th tt l d tiss nd sal f the p t e b l lso n the sal a f perso s h t th t m f th p m nt e t t t ck d by the h e p t a d h se h f the virus th blood also h ed p t e result I e p r m t n rabb t t wh ch he p odu ed h r p t i c d i s e s of th n t r l r v u s y s t m by t n y c t f blood f m m l s f t d th h rpes d t e m p t e t f the c f ther b b t s th the e phal t c t s s the es l t l y po t i e l l e the a b l t d m t t the h rptet us the p n al fluid The most esistant rabb t s re t e lb Like Mariani th a thor found an spe

often than cancer. For the prevention of complications, immediate subsequent radical operation, electrocoagulation, or chemical cauterization, and preparatory irradiation are recommended. When the nature of the tumor is not clear and the skin above the growth is apparently normal, the regional lymph glands should be removed at the same time if they are movable. When the tumor involves the mucosa, the ring shaped diathermy electrode should be employed. In cases of tumor of the breast, histological examination should not be made unless a radical operation can be performed at once if it should be necessary. Smaller nodular tumors should be removed with a wide margin of healthy tissue. In cases of small circumscribed tumors and mobile metastatic glands, total extirpation of the tumors with the glands may be done in the surgeon's office.

A STAFF (Z)

DUCTLESS GLANDS

Bulger, H. A., and Barr, D. P. The Relation of the Parathyroid Glands to Calcium Metabolism. *Ann Int Med*, 1931, 5, 552.

Clinical hyperparathyroidism presenting the features produced by the injection of parathyroid extract is recognized as a definite entity and encountered most often in association with the multiple lesions of osteitis fibrosa cystica. In a number of cases it has been arrested completely by removal of

the parathyroid tumors of hyperplastic tissue. Of eighteen surgically treated cases cited by the authors, the serum calcium was decreased, the progress of the disease and the formation of bone cysts were arrested, and recalcification of the bones occurred after the operation in sixteen.

The authors suggest that multiple myeloma may have some relation to hyperplasia of the parathyroids as in this condition also there is a disturbance of the calcium balance, and that metastatic tumors of bone may be associated with similar conditions. They believe that the hyperplasia of the parathyroids in rickets and osteomalacia is a compensatory rather than a primary phenomenon since in these conditions there is a tendency toward a low serum calcium and tetany and the bone changes are different. The principal cause of the development of rickets and osteomalacia is a deficiency of ultraviolet light and Vitamin D.

The signs of abnormal parathyroid function include changes in the serum calcium, excessive excretion of calcium in the urine, decalcification of the skeleton, and the deposition of calcium in the tissues. As a rule the condition can be diagnosed most easily from changes in the serum calcium, but occasionally the serum calcium remains within the normal limits.

The serum calcium rises slightly when the serum protein is high and falls when the serum phosphate is high.

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NOTE.—THE BOLD F C E F G 'RES IN BRACKET AT THE RIGHT A RE ARE CE I D CATE THE P CE T
I UE N WHICH A STRACT THE A TICLE R RR O M Y B FOUND

SURGERY OF THE HEAD AND NECK

H d

I t l i n j t f f l l g j r y t t h
p eumat l l f t h k l l T S o o A t a h u r u g
Sca d. 93 l v 3
Ost my l t f t h b e s f t h k u l l d t s t t m t
C Stror d P C rescu R d chu B ch t
93 xx 56
St dies th t u l g y f t e o m y l t s f t h j w t h
b f t h h u s t i n t h D t l l n s t u t t d
S r g a l P l y h i M u n i c h E L i v e z D t s c h
M t s c h r f Z a h h 93 h 589 [209]
Acut t e o m y l t f t h p n m u l l i n y g
n f t l l R R R n a A m J D C h a l d 93 l 7
O t m y l t f t h j w s e q t e c t m y m p l t
p f t h m a d a b l e I T x v R d chu
B h t 93 xx 37
O t t s f t h u n r m a x l l t h l f t d H B
R d p l d d e s A s o c m e d g t 93 8 3
O p r a t p o c e d f j t f t h j E B D
S e r r P r o c R y S o c M e d L o d 93 xx 47 [209]
F b c h d o t m f t h m a l l d u g l
t m t B u r o a v P o s c u S n d M i n L e s c u
R d h u B c h e s t 93 xx 3 3
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t o o t h M D c r s B l l t m e m S o d c h u r u g n s
d P 93 x x x 5 7
Th f t f p p e s f t h p t d t o n t h
g l y g e u l t u W D x z e c d F M c n
w k t L y h u 93 57
Th p a t h g f t p p r a t p r o t u t A
p e n m t a l t d y A L B R R B c k d R
L B u x r o A m J M S c 93 l x x x 639 [210]
Acut p p u r a t p a r o t A p t h l g a l a d b b l g
g p h u j t d y w i t h p o r t f t w c a R P C t z
A m J M S c 93 c i r x x 640 [210]
A a s f i t r a l b s c e s f t h p t d b m a x i l l r y
d b l g u l g l a d p a l y t L J o s A r c h f
O h N k h l k o p h 93 c x x i i i 345
A p s e u d o c t f t h p r o t u g l D M T d o c u
R d c h u B c h a e s t 93 x x x 94

Ey

O p h t h a l m l g e a l t l e s u n i v u l d f u l
t w i A H A r c h K l a S t u f f g v r b g s f r a c h g
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M e g a l o p h t h a l m o s F W L P r o c R y S o c M e d
L o d 93 x x 57
I n h t i t a n i n o p h t h a l m l g y E B x s s E e s t i r s t
93 i x 409
A b r e d i t a r y y n d r m b r m l b t i l e n s s f t h
b o e s b l s e l r a d d a l e s s C k f x p K l n
W e h n s c h r 93 83

H d t r y p e c t f L b p t t r o p h y W R
R L a t 93 c x x 8
I t h h n t b l p t u c t r o p h y b d e s L e b e
t p h y S S m i t A c h f A n h 93 c i
Th t h p e u t p h l i t e s a m r o t u t h o y H
V z z Z i s c h f k d h 93 l i 59
R f t m y p a E T A r c h f O p h t h 93
x 454
H y p e r p h n a t t l g y d i a g n d t r e a t e r
J H D u v i A m J O p h t h 93 4
Th d i a g n o s t i f b t a l e c h y m i n f r a m
f t h b t P B t L y c h u 93 r v i i 60
L f t b t l l l i t w i t h h m l a t a l s u t H W
S C A R L t r d J A B t t A m J O p h t h 93
58
C o g t l c y s t f t h b t f t h m l a l P
V A N C C l j l m e d 93 76
A c a f t o o b t a l p h l g m f f t o h m a d l
g i D A h d m e d u r u g y e s p e c i a l 93
005
Th n a t f l d H v r K l n M n a t a l f
A g h 93 l x v 5 7
S q m l l c a r c u m f t h r b t p b a b l t
m r p h i s f d m t m G F S x J A m M
A 93 3
S o m l t e d f e c t r u t r g r y t h e
b t a l g n T P K v e r P R y S o c M e d
L o d 3 x x 58
Th l i t l a m p t h d u g n t r a c u l f g n
b o d i R C j o M e d I b e r a 93 4 5
A d t a l d i n t t l y i n j e s t h W r a
U n i r s t y L y C h i n t h y r s f r o m 9 t g n
W H M L A K l n o c z 93 i i 7
C h l d p m t l t d y f y j e s d t o
h n n e d h d y I A n n c z K l n o c n a
93 i i i 53
O c u l p l u m b m m h i l i e n J L G s o B t j
O p h t h 93 637
Th t e s t i f h m i l d m e c h a n i l t a t t o o f
R P K l M t b l f A g n h 93 l x
665
I t e s t h e y d t d m r a d i a t n O B
A t O p h t h l 93 x x 3
Th p e n p h l s c l j y s e m d t h y S c r
K l M t b l f A g h 93 l x x x 53
f h t g r a p h f t h f d m W R M r m a
R t o e u r o f t a l m l y d r u g e u l 93 i 4 5
I t r n l e c t n s t h y e T i m K l n M n a t a l
f A g h 93 l x x x 59
Th e d m t a p h t h a l m l g y W a c h
o o K l n M t b l f A g n h 93 l x x v 647
Th f l e c t f m e d t p o t h p t e i c o t e n t d e t
o c u l a f l d A S 4 A r c h f A g h 93 i 6
A h e c k i n g t a l r i d f t m t r a C E f a n d
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APRIL, 1932

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APRIL, 1932

International Abstract of Surgery

Supplementary to
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INTERNATIONAL ABSTRACT OF SURGERY

APRIL, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Counsell, A. C. The Pathology of Dental Cysts
Proc Roy Soc Med Lond, 1931, xxv, 201

Dental cysts are formed by tissue necrosis resulting from chronic inflammation. The author cites three cases which support the theory that the epithelium of dental granulomata and cysts is derived from the surface epithelium by ingrowth along a sinus tract. In one case the sinus led into the maxillary antrum and was partially lined by ciliated columnar epithelium. J. FRANK DOUGHTY, M.D.

Frey, S. A Clinical Contribution on Suppurative Inflammation of the Jaws (Beitrag zur eitrigen Entzündung der Kieferknochen) *Beitr z klin Chir* 1931, clxii, 300

The osteomyelitis of the jaw so prevalent in East Prussia has been seen frequently at the clinic at Königsberg especially during the last ten years. This report is based on sixty cases in which the disease was extensive.

The bone may become infected by way of the blood stream or from the surrounding tissues. In cases of the latter type it is usually odontogenic but sometimes it has no relation to the dental system. The odontogenic form may be of intra-dental or extradental origin. Intradental infection is an infection of a root canal. It may invade the jaw bone directly or involve it secondarily as the result of suppurative periostitis. In cases of infection of the jaw secondary to periostitis it is difficult to distinguish between the periostitis and osteomyelitis as only the further course of the condition will disclose the extent to which the bone is involved. Extradental infection arises in the tissues immediately surrounding a tooth in the form of a suppurative inflammation of the soft parts of the jaw and the periosteum. It may be caused by the extraction of a tooth, the eruption of a wisdom tooth or an abnormally located unerupted tooth. Infection not related to the dental system may result from condi-

tions such as stomatitis, a compound fracture or a furuncle on the chin.

Of the sixty cases reviewed by the author the osteomyelitic process involved the upper jaw in seven and the lower jaw in fifty-three. One of the patients with involvement of the upper jaw was a nursing infant. In nurslings the upper jaw is affected in 90 per cent of the cases. The condition develops as a rule in the second or third week of life and the dental anlage plays a prominent role in its causation (sequestering inflammation of the dental anlage). In the case reviewed by Frey an orbital phlegmon with exophthalmos and oedema of the lids appeared rapidly, apparently as the result of extension of the infection into the maxilla. The infection reached the bone from the surrounding tissues also in the six other cases of osteomyelitis of the upper jaw. In two it followed the extraction of a tooth and in two it had its origin in milk teeth. In four cases the course was acute and in two it was chronic. The disease was always located in the alveolar process. In one case it involved the palatal process in addition. In another it involved the anterior wall and floor of the antrum but did not cause empyema of the cavity. In one case there was suppuration of the parotid gland which left an external salivary fistula, and in another a fatal generalized pyogenic infection developed from thrombophlebitis of the facial veins.

As a rule treatment by incision from the mouth was sufficient. Loosened milk teeth were extracted to improve the chances of preserving the permanent teeth. Any permanent teeth giving origin to infection were removed. An attempt was made to preserve permanent teeth which were loose as it is well known that even very loose teeth may become normally solid again. The duration of the disease varied between one and eight months.

After the first year of life involvement of the mandible is as much more frequent than involvement of the maxilla both in young persons and in adults. The reason for the greater frequency of involvement of the lower jaw is to be sought in the anatomical

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Surgery of the Nervous System

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 Peripheral Nerves
 Sympathetic Nerves
 Miscellaneous

Surgery of the Chest

Chest Wall and Breast
 Trachea Lungs and Pleura
 Heart and Pericardium
 Esophagus and Mediastinum
 Miscellaneous

Surgery of the Abdomen

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 Gastro-intestinal Tract
 Liver Gall Bladder and Biliary System
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This gave rise to a sensation of rubbing. The author is of the opinion that the epidermal ingrowth is to be explained by the fact that during the radium treatment the conjunctiva was more strongly acted upon than the skin. Nevertheless, in two cases the contrary was seen, the conjunctiva sending a small flap out over the skin side.

Other complications included conjunctivitis, which occurred in an occasional case and was probably caused by the lead prosthesis. In ten cases permanent vascular dilatation occurred on the sclera (in four of these the lead prosthesis was too thin). In addition to the necroses of the cornea caused by recurrence and lagophthalmos, lagophthalmic keratitis occurred in three cases. In two, it was healed, and in one, treatment was not permitted. In five cases there was a slight keratitis which cleared up entirely, in two, it resulted from erosion caused by the lead prosthesis, in two, from the epidermal covering on the inner side of the lid, and in one from radium injury. In one case iritis occurred with atrophy of a sector pointing downward. There were four cases of cataract ascribable to the radium treatment, in three, the eyeball had been left uncovered, and in one, the lead prosthesis had been only $\frac{1}{2}$ mm thick.

C. LOTTRUP-ANDERSEN (O)

Fejér, G. Malignant Tumors of the Eyeball and Its Adnexa (Ueber die malignen Geschwülste des Bulbus und deren Anhaengegebilde) *Therapia* 1931, viii, 272

The author makes general observations regarding the localization and treatment of malignant tumors of the eyeball.

The most common site of benign epitheliomata is the skin of the eyelid. These lesions can nearly always be cured by operation if they are not too far advanced.

Carcinomatous degeneration of the conjunctiva is very rare. It occurs most frequently in association with the so called epibulbar carcinomata which have a comparatively unfavorable prognosis and often require enucleation of the eyeball. Nævus carcinoma of the conjunctiva also has an unfavorable prognosis.

The most common sites of melanosarcoma which has an absolutely unfavorable prognosis and requires early enucleation of the eyeball, are the iris, the ciliary body and the choroidea. Very rarely a small tumor of the iris can be removed by iridectomy. Metastatic tumors of the iris and the choroid are uncommon.

The most frequent site of glioma is the retina. The prognosis of glioma of the retina is absolutely unfavorable. Only early enucleation can be considered. Also unfavorable is the prognosis of malignant tumors of the optic nerve. In only very rare cases of such tumors is it possible to preserve slight vision by operation. Only malignant tumors of the orbit can be favorably influenced by treatment with the roentgen rays, mesothorium or radium.

N. BLATT (O)

Irons, E. E. The Etiology of Chronic Uveitis 4th *J. Ophth.*, 1931, vi, 1228

Irons discusses the etiology of uveitis from the standpoint of the internist. As a relation between chronicity and cause is often not evident, he desires a definition of chronic uveitis based on the clinical course and severity of the condition and the type of the exudate. He states that in the evaluation of certain infections as causative factors in disease of the uvea the differences in the general background of disease in different communities must be considered. In one community syphilis may be reported as the cause of 20 per cent of the cases of uveitis whereas in another community it may be reported as the cause of 80 per cent. The differences between private and clinic patients are less marked, but must also be taken into consideration.

The production of iritis by the lodgment or bacterial emboli is of interest when one considers the number of cases of known sepsis in which metastasis does not occur. Recurrences may be explained by bacterial toxins from the same or another focus which excite a reaction in a uvea already sensitized by the first attack.

VIRGIL WESCOTT, M.D.

Schoenberg, M. J. Experiences with the Gonin Operation 1st *Ch. Ophth.*, 1931, vi, 675

Schoenberg states that the general condition has some relation to the occurrence of detachment of the retina. In a large majority of the cases there is a profound change in the colloidal status of the vitreous. In about 75 per cent of the cases a tear is discovered in the retina. The retina exhibits degenerative changes over more or less extensive areas. The choroid is also the site of lesions in the great majority of cases. In some instances even the sclera presents changes such as thinning of its walls, slight bulging, and patches of engorgement of the episcleral tissues.

In cases of limited shallow detachments and small tears near the ora serrata, pseudotears, subretinal tumors, aphacic eyes, and cloudy media, diagnostic difficulties are encountered. The vitreous should be examined with the slit lamp as well as by ophthalmoscopy for minute dust-like opacities, flocculi or thread like opacities, membranous opacities (shreds of retina), dust and flocculent masses, large globular pigmentary opacities, gray masses of exudate and blood in the form of streaks or lamellæ infiltrated between the vitreous strata. The more normal the vitreous the better the prognosis.

Gonin states that ignipuncture is applicable only to retinal detachments with a hole or tear in which the condition has been present for only two or three months. The tears are small and located in accessible areas and the vitreous, iris and retina are relatively normal. It is contra-indicated by detachments of long duration, total detachment or even short duration, cases of detachment without a tear or with a very large tear principally at the ora serrata (retinal dialysis), cloudy media, marked degeneration of the vitreous and retina and active iridocyclitis.

such changes a single free incision of the drum is sufficient. The necessity for repeated incisions is an indication for opening of the mastoid. The author operates under local anaesthesia and completes the operation in from four to eight minutes. He passes one drain carefully in the antrum and another into the canal. The former is removed on the fourth day. If the discharge from the middle ear persists the removal of a mass of infected pharyngeal tonsil may be necessary. It is a good routine practice to use a 5 per cent protein silver solution in the nose.

Johnston has performed twenty-one mastoid operations on children ranging from ten weeks to eighteen months of age. There were two deaths. In only one half of the cases were gastro intestinal symptoms predominant. The organism most frequently found was the streptococcus hemolyticus.

GEORGE R. McAULIFF, M.D.

NOSE AND SINUSES

Tschudnossowetow, W. A. Connection of the Lymph System of the Nose with the Cranial Cavity (Zur Frage nach dem Zusammenhang des Lymphsystems der Nase mit der Schaedelhöhle). *Otolaryngol. slaw.*, 1931, III, 393.

The author reports experiments carried out on seventy dogs. Fifty-five of the animals were first slowly bled to death and a suspension of India ink in distilled water, strained through chamois skin and with the admixture of a small amount of gum arabic, was then introduced into the subarachnoid space from the cervical segment of the spinal cord. In the experiments on the remaining fifteen animals an emulsion of India ink in isotonic Ringer solution was injected during life into the caudal segment of the cord after laminectomy of the third and fourth lumbar vertebrae, or ordinary commercial India ink diluted with distilled water was introduced by suboccipital puncture.

Six colored plates and a number of black and white reproductions show the distribution of the India ink in the head in gross and microscopic specimens.

The specimens proved conclusively that there is a connection between the subarachnoid spaces of the brain and the lymph system of the nasal cavity. The passage of the fluid into the nasal mucous membrane took place by way of the perineural spaces of the olfactory nerves. The microscopic slides showed no independent morphological routes by which the India ink could reach this lymph system but demonstrated independent lymph passages connecting the cranial cavity with the nasal cavity and passages between the branches of the olfactory nerves and the lymph system of the nose. The subarachnoid space and the lymph system of the nasal cavity are two independent systems each of which to all appearances possesses its own independent lymph stream and is connected with the other by fine anastomoses of the perineural and epineural passages. A connection between the lymph vessels of the nasal mucous membrane and

those of the external cutaneous covering of the nose was demonstrated beyond doubt.

The article has a bibliography of fifty-four references.

FLORENCE ANNAN CARPENTER

MOUTH

Daland, E. M. Plastic Reconstruction of the Lower Lip. *New England J. Med.*, 1931, CCV, 1131.

In the usual method of closure following removal of the lower lip for carcinoma it is necessary to discard triangles of skin above and below the lateral incisions on the cheek which are made at the level of the commissure, in order to correct the inequality of the lip above and the chin below with the reconstructed lip. In the operation described by Daland these triangles are used instead of being discarded.

A wide excision of the growth on the lower lip is done with a $\frac{3}{4}$ in. margin of healthy tissue on every side and an adequate amount of mucous membrane. The mucous membrane inside the cheeks is loosened by undermining. By the use of traction the flaps are drawn to the midline where they are sutured together to form the lining of the new lip. Curved triangular skin flaps are raised on each side with their apices in the nasolabial folds, about $\frac{1}{2}$ in. below the nose, and their bases on a line drawn from the lower edge of the defect to the level of the commissure. The width of the base is equal to the desired width of the new lip. The pointed tips of these flaps are discarded and the flaps are rotated mesially. The lower edges are sutured to the edges of the old defect and the upper edges to the new lining to form the vermilion border. The suture line of the skin flaps is not made directly over that of the mucous membrane. The defect in the upper lip is closed by suturing the skin edges together. In this way a new nasolabial fold is formed and tension on the bases of the skin flaps is released. No drainage or dressing is used. In unilateral defects the procedure may be carried out on one side only.

The author reports nineteen cases in which this operation was performed. Three of the patients have died without recurrence, one is alive with recurrence, seven have died of cancer, and the others are alive and well from one year and two months to four years and seven months after the operation.

WILLIAM G. HANM, M.D.

PHARYNX

Dorrance, G. M. The Treatment of Strictures of the Oropharynx. *Arch. Otolaryngol.*, 1931, XLV, 731.

Stricture of the oropharynx may occur as the result of the swallowing of acids or caustics as a complication of ulcerative syphilis of the pharynx or very rarely as a sequela of tonsillectomy as in the case reported in this article. The treatment usually recommended is dilatation but the results of this procedure are unsatisfactory.

In the author's case the opening in the pharynx was situated behind the dorsal surface of the tongue.

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j t l e a t n d w e l l g f t h l d n c h g
l d b e s t h e g t h b t a t h e a m t
a s a t f t y t h e y m e d

T h t c h n i c e d t h c h e o f c a s e a e h
s l W h l t h d t p e t e l d t t t
d f t e c l u r g r l g t h a l f t h e t e t
m t t h y d m t r a t e t h t a t l a t 53 m f
d m m b m p l n t d t h s a f e t y a d t h t a p r d
c a u s e s d g e t i e h g s i g l m t S p c i d
l s h a g h b t t p p a n l l t r
t d s a p p r m p l e t l y S W A D s M D

EAR

J h t W H M t i d i t l i l l t A R
v l w f t h L i t r t u w i t h a S u m m r y f
C a s e S t d i e d f O l R h l e L a f d
93 1 5

The a t h t e s t h t f n t e a h l l b e
e m e l f r q u l y a d p e t s h u l l b e p e
f m l l y h n l e f t e c h n g e s t h r u m
m m b r a n o t d I n s o m s e s p r e s e t

such changes a single free incision of the drum is sufficient. The necessity for repeated incisions is an indication for opening of the mastoid. The author operates under local anesthesia and completes the operation in from four to eight minutes. He passes one drum carefully in the intrum and another into the canal. The former is removed on the fourth day. If the discharge from the middle ear persists the removal of a mass of infected pharyngeal tonsil may be necessary. It is a good routine practice to use a 5 per cent protein silver solution in the nose.

Johnston has performed twenty-one mastoid operations on children ranging from ten weeks to eight months of age. There were two deaths. In only one-half of the cases were gastro-intestinal symptoms predominant. The organism most frequently found was the streptococcus hemolyticus.

GEORGE R. McVULF, M.D.

NOSE AND SINUSES

Tschudnossowetow, W. A. Connection of the Lymph System of the Nose with the Cranial Cavity (*Zur Frage nach dem Zusammenhang des Lymphsystems der Nase mit der Schädelhöhle*). *Ötolaryng. of Stg.*, 1931, III, 593.

The author reports experiments carried out on seventy dogs. Fifty-five of the animals were first slowly bled to death and a suspension of India ink in distilled water strained through chamois skin and with the admixture of a small amount of gum arabic was then introduced into the subarachnoid space from the cervical segment of the spinal cord. In the experiments on the remaining fifteen animals in emulsion of India ink in isotonic Ringer solution was injected during life into the caudal segment of the cord after laminectomy of the third and fourth lumbar vertebrae, or ordinary commercial India ink diluted with distilled water was introduced by suboccipital puncture.

Six colored plates and a number of black and white reproductions show the distribution of the India ink in the head in gross and microscopic specimens.

The specimens proved conclusively that there is a connection between the subarachnoid spaces of the brain and the lymph system of the nasal cavity. The passage of the fluid into the nasal mucous membrane took place by way of the perineural spaces of the olfactory nerves. The microscopic slides showed no independent morphological routes by which the India ink could reach this lymph system, but demonstrated independent lymph passages connecting the cranial cavity with the nasal cavity and passages between the branches of the olfactory nerves and the lymph system of the nose. The subarachnoid space and the lymph system of the nasal cavity are two independent systems each of which to all appearances possesses its own independent lymph stream and is connected with the other by fine anastomoses of the perineural and epineural passages. A connection between the lymph vessels of the nasal mucous membrane and

those of the external cutaneous covering of the nose was demonstrated beyond doubt.

The article has a bibliography of fifty-four references.

FLORENCE ANNAN CARLISLE

MOUTH

Daland, F. M. Plastic Reconstruction of the Lower Lip. *New England J. Med.*, 1931, CCV, 1131.

In the usual method of closure following removal of the lower lip for carcinoma it is necessary to discard triangles of skin above and below the lateral incisions on the cheek which are made at the level of the commissure, in order to correct the inequality of the lip above and the chin below with the reconstructed lip. In the operation described by Daland these triangles are used instead of being discarded.

A wide excision of the growth on the lower lip is done with a $\frac{1}{4}$ in margin of healthy tissue on every side and in adequate amount of mucous membrane. The mucous membrane inside the cheeks is loosened by undermining. By the use of traction the flaps are drawn to the midline where they are sutured together to form the lining of the new lip. Curved triangular skin flaps are raised on each side with their apices in the nasolabial folds, about $\frac{1}{2}$ in below the nose, and their bases on a line drawn from the lower edge of the defect to the level of the commissure. The width of the base is equal to the desired width of the new lip. The pointed tips of these flaps are discarded and the flaps are rotated mesially. The lower edges are sutured to the edges of the old defect and the upper edges to the new lining to form the vermilion border. The suture line of the skin flaps is not made directly over that of the mucous membrane. The defect in the upper lip is closed by suturing the skin edges together. In this way a new nasolabial fold is formed and tension on the bases of the skin flaps is released. No drainage or dressing is used. In unilateral defects the procedure may be carried out on one side only.

The author reports nineteen cases in which this operation was performed. Three of the patients have died without recurrence, one is alive with recurrence, seven have died of cancer, and the others are alive and well from one year and two months to four years and seven months after the operation.

WILLIAM G. HAMM, M.D.

PHARYNX

Dorrance, G. M. The Treatment of Strictures of the Oropharynx. *Arch. Otolaryngol.*, 1931, LV, 731.

Stricture of the oropharynx may occur as the result of the swallowing of acids or caustics, as a complication of ulcerative syphilis of the pharynx, or, very rarely, as a sequel of tonsillectomy as in the case reported in this article. The treatment usually recommended is dilatation, but the results of this procedure are unsatisfactory.

In the author's case the opening in the pharynx was situated behind the dorsal surface of the tongue.

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In th e c n d c e o n j w e u c l e t d b e s e
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Th t h qu and th h f c s e v e f
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s e s d g n t i h g g l m a t s p e c i a l
l c h g s h b e e e n t p p e a l l t
t d s r p o m p l e t f S E L A D M D

EAR

J h t n W H M t i d i t l n l f t A R
l w f th l t r a t with S m m r y f
Cave St d e t O d R a l f L y t f
93 l 5

Tl uth t tes th t n f a t h f l b e
m l f q t l d p e t h l l b e p e
f m l l y h n d f t h g e s th f r u m
m m b r a t l l n s o m c a s e p s e n t g

through the mouth an external operation may be performed. Retention cysts are removed with the tonsil which is usually infected or are incised the lining then being destroyed by diathermy. Angiomata in children are treated with radium needles tubes on an applicator or emanation seeds. Those occurring in older persons are destroyed with the protected diathermy point. The prognosis in all cases depends on the thoroughness of the removal. When removal is complete the prognosis is usually good.

Of the 35 patients with papilloma, 30 were males. The average age was forty and two-tenths years. Fourteen of the lesions were situated on the faucial pillars, 10 were on the soft palate, 10 were on the tonsil, and 1 was on the posterior wall of the pharynx. The papillomata were single growths and apparently attached by a short thin pedicle. All of the lesions were removed, most of them by being clipped off. In the majority of the cases the pedicle or base was cauterized.

Cystadenomata have been said to be embryonic and also to spring from the germinative layer of the epithelium of the palate. Three of the 5 patients whose cases are reviewed by the authors were women, the average age was forty-five years. All of the lesions occurred in the hard palate. In 1 case the soft palate was invaded and in 2 cases there was involvement of the gum. The tumors were sessile, smooth, irregularly oval or rounded, grayish or pinkish and soft or firm. These tumors must be distinguished from adenocarcinoma and sarcoma. They have some features in common with adenocarcinoma of the mixed tumor type. In only 1 of the cases reviewed had previous treatment been given. At the Clinic the treatment consisted of careful excision of the tumor with the knife or cautery, followed by cauterization of the base to prevent recurrence. The 5 patients are alive and free from the disease.

Two of the 4 lipomata in the cases reviewed were situated in the pharynx, 1 was in the tonsillar fossa and 1 was in the hard palate. Those arising from the posterior wall of the pharynx were sessile whereas those of the palate or tonsillar fossa were pedunculated. Surgical removal was carried out in all of the cases with good results.

Three benign fibrous tumors were seen. Two of them were situated on the palate, and 1, a fibromyxoma, was in the oropharynx behind the posterior pillar of the tonsil. One of the tumors of the palate was pedunculated, the other was cystic. All of these neoplasms were removed surgically with good results.

There were 5 vascular tumors of the pharynx. Two were varices, 2 were hemangiomata and 1 was a lymphangioma.

Varices were found in 2 cases. Both lesions were pharyngeal. Treatment was not considered necessary in either case.

Hemangioma was observed in 2 cases. In 1 case, tracheotomy had been performed. Both lesions

were treated with radium in tubes on an applicator in contact and in needles and with emanation seeds and applications outside the neck.

One lymphangioma was observed. Radium irradiation was advised but the patient refused treatment.

Bone and cartilage may occur in the tonsil but are not true tumors. A chondroma was removed from the left tonsil of 1 patient and a non-ulcerated bony tumor was found on the posterior wall of the pharynx in another.

Polyps were observed in 2 cases. One of these cases is discussed in the authors' third study of tumors of the tonsil and pharynx. In the other, a fibromyxomatous polyp just above the glottis was removed without incident.

Cysts were observed in 3 patients. They varied in size and were soft, smooth, rounded and cystic. In 1 case the tonsils were removed but in the other the cysts were removed alone.

There were 5 tumors composed of lymphoid tissue. All occurred in women.

New, G. B., and Childrev, J. H. Tumors of the Tonsil and Pharynx (357 Cases). II. Adenocarcinoma of the Mixed Tumor Type (74 Cases). *Arch. Otolaryngol.* 1931, vi, 600.

So-called mixed tumors, which might better be designated as "adenocarcinoma of the mixed tumor type," are not rare in the pharynx and palate. Their most common situation is the palate. The authors report 74 cases and summarize the results in a table.

The tumors probably have their origin in embryonic displacement or enclaves. They are formed of epithelial and connective tissue elements.

The tumors may occur at any age, but are most common in the fourth decade. They are found slightly more frequently in men than in women. Occasionally they are discovered in examination of

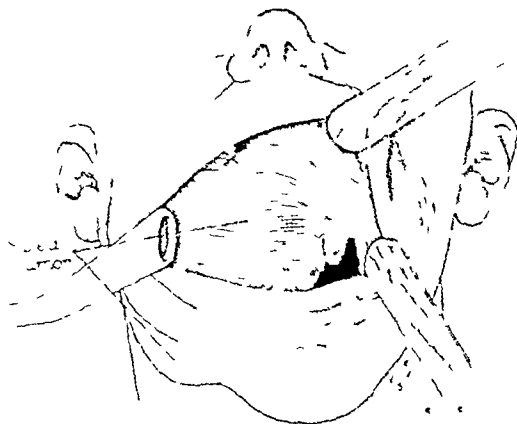


Fig. 1. The dotted lines indicate the extent of the tumor. The tumor was removed through the pharynx.

The average age of the 220 patients was fifty-four and seven-tenths years. Eighty-seven and seven-tenths per cent of the patients were men. The most common sites of malignant pharyngeal tumors are the soft palate and faucial pillars. With the exception of lymphosarcoma, malignancy is rarely primary in the tonsil itself. Extension of the lesions to involve neighboring structures—the tonsil, pharynx, hypopharynx, cheek, jaw, alveolus, tongue, and floor of the mouth—is common.

Low-grade epitheliomata tend to be harder and to ulcerate earlier than epitheliomata of Grades 3 or 4. The latter approach in their consistency the fleshy, bulky lymphosarcoma.

Metastasis is common. At the time of the patient's admission to the Clinic metastasis was apparently present in the cervical lymph nodes in 65 per cent of the cases. The average duration of the disease in cases with or without metastases was seven and four-hundredths months. In some cases the symptoms of malignancy are absent, and in others, as in 18.65 per cent of the cases reviewed by the authors, the early signs consist of enlargement of cervical lymph nodes. In 75.5 per cent of the cases reviewed by the authors the early symptoms were referred to the throat and consisted of various types of paresthesia, pain or soreness of the throat, ear, or tongue, dysphagia, cough, and dyspnea or trismus. These depend, of course, on the situation and extent of the lesion.

The differential diagnosis is important from the prognostic and therapeutic standpoints. It can be made satisfactorily only by microscopic examination of the tissue.

In most cases the prognosis as to length of life is grave. It is best in cases of low-grade epithelioma, fibrosarcoma, and the few lesions of a less active type. It is affected unfavorably by previous treatment. Thirty-seven and seven-tenths per cent of the patients whose cases are reviewed by the authors had been operated upon elsewhere previously.

The selection of the patients for treatment is important. Of the patients whose cases are reviewed

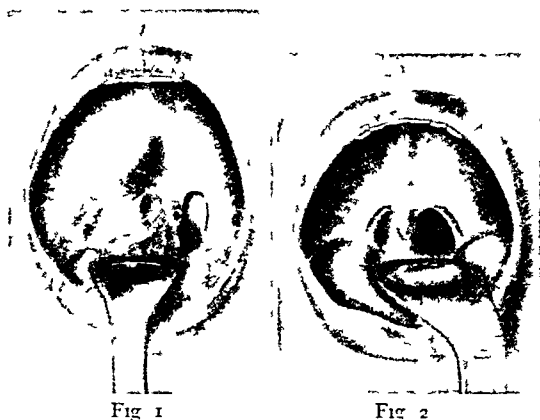


Fig 1

Fig 2

Fig 1. An extensive lymphosarcoma of the pharynx, nasopharynx, and hypopharynx.

Fig 2. The same case as that shown in Fig 1, ten days later demonstrating the value of irradiation of these highly malignant tumors.

by the authors 36.69 per cent were treated at the Clinic. Of the 80 treated 28 (35 per cent) had been operated on elsewhere. At the Mayo Clinic accessible growths are excised or destroyed with the cautery or by diathermy. Radium in the form of a plaque in tubes or needles or as radon seeds was used to supplement this treatment for the primary lesion. In all cases of low-grade carcinoma of the pharynx and tonsil the upper deep cervical lymph nodes are removed if the prognosis of the local lesion warrants. The metastasis to the cervical lymph nodes from an epithelioma of Grade 4 or from a lymphosarcomatous type of growth is irradiated with radium packs or deep roentgen rays, but other metastatic nodes of a less active type of growth are excised. The neck is also irradiated in such cases.

The few cases of miscellaneous malignant neoplasms reviewed are of interest chiefly because of the rarity of the tumors.

RESULTS IN 174 CASES OF SQUAMOUS-CELL EPITHELIOMA

Grade of malignancy	Patients treated												Patients not treated							
	Total	Patients living			Patients dead						Patients dead		Patients living							
		Number	Traced	Life months	Number	Life months	Well years			Good results			Fair results		Number	Traced	Life months	Number	Life months	
							3	5	7	Number	Life months	Well years		Number						Life months
												3	5							
4	6	18	18	44.3	9	39.6			1	0	50.0		1		0	0	0	0	0	
3	3	5	24	35.7	0	46.4		1	1	4	70.0	0	1	13	10.0	0	0	6.33		
	36	14	13	41.0	11	36.86	3	0	1		70.0		1			0	18	1.2	1	
1	3			53.0	2	53.0	2	1								1				
Total	14	59	57	40.3	9	41.1	9	6	1	8	70.6	6	20	15.7	115	67	76.1	1	0	

RESULTS IN 74 CASES OF ADENOCARCINOMA OF THE MIXED TUMOR TYPE

T e a m e	T a l p a t i s	P e d	P e n t s l g				P a t i e n t s d e a d		
			N u m b e r	A v e r a g e m o n t h	W i l l e a			N u m b e r	A m o u n t o f l e
							t o		
I d u t i o									
D i s m d d o r e r y d d a			8	6					
E c a u o f m o r r e s e d (d e r m o e	3								
T e a i				9		5	2		5
T e a m e g i		6	7	8					1
T a l									

*T m k w n b p r e s e i

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m o b l a n d h s m o o t h n o u l a i d f
H w e r t h y a r y t h e s e f t e s l l s
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p t n t m f r e m n t n 5 c m

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a r g m e t m t o f t l g r m
t u e w t h w h t c h t n t c a l l y b l d d



Fig. H g e d e n o c r e m m i x e d t m t y p e f
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c u t z a t o i a d t

O f 74 p t e n t s o v a p n d f f t
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r e g a l t t m e t

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f i t v g h t a d h l f m o t h O f t h e 30 l g
p t t s 29 h e b f f r o m s y m p t o m f o u
y e a 5 f o e y r s 8 f o e y a d 4
f r o m l e e t t h t n v s T p t t s d e d
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t e t d 6 t c e d S e e f d t b
l e b t 5 f t h e m s t l l h d t m o N e
k t b d d O f t h l a t t 6 d d f t h e c o p l m

N w G B d C h i l d y J H T m f t h
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T m E l l f A d o c a t m f t h
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g l 93 73

T h a t h e w f m l g t t m r
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m a p r i p l l y q m l l p t h e l m a t a
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m i x e d t m o r s T h q m l l p t h l m t r e
p p a l l y f a c t t y p e d h b m
a l l d l y m p h o p t h l m t d t t l
l l e a c m t

S c m t t t h p h r y a e p p l l y l y m p h
s a r e m a t T h e t m r s c o t t e d 4 55 p e c e n t
f t h 22 r e v d A f w f b s a c m t a d a
m l l g r p f t m r s f t y p e i l d g
h a m g i o e d t h l m m l a o p t h l m m v e l
m d m a l g t d r m d s e e

of tumors is made up chiefly of the adenomata and their metamorphoses

Clinically, the adenoma has a distinctly tumorous character since it appears as an isolated, globular protuberance. Nevertheless, the functional factor cannot be left out of consideration. This is evident from the life curve of these tumors, their frequency in relation to the frequency of endemic goiter, and their morphologicofunctional state as compared with the parent tissue. In addition there is the new disease picture, toxic adenoma, which is not seen very frequently in Europe. In this condition also a special functional activity is possible. Another indication of the tumorous character of the adenoma is its resistance to iodine. At operation it is necessary merely to shell out the adenoma, the diffuse struma substance can be left.

Of the malignant tumors, the author mentions first the struma of Langhans. This struma does not present distinct clinical differences from nodular

goiter and must be diagnosed from the histological picture. Carcinomata and sarcomata may be confused clinically with strumitis, hæmorrhages into an adenoma, or iron-hard struma. Sudden striking, spontaneous growth of a benign goiter of long duration should suggest malignancy. It would be an error to delay treatment until the appearance of more definite symptoms, such as adherence of the skin, radiating pains and hoarseness. The best treatment is early radical operation. Metastasis is favored by the vascular richness of these tumors. In cases in which radical operation is no longer possible, a non-radical procedure should be carried out and followed by roentgen therapy as this has yielded very good results of long duration. If the lesion is too advanced for any operative procedure, roentgen irradiation should be administered. Under some circumstances this will give satisfactory results. When there is danger of suffocation, tracheotomy should be done.

MAXIMILIAN HIRSCH (Z)

Tabanelli, M The Chloride Content of the Blood and Spinal Fluid in Craniocerebral Injuries (Cloruremia e clorurorachia nei traumatizzati cranio cerebrali) *Clin chir*, 1931, vii, 844

Tabanelli determined the sodium chloride content of the blood and spinal fluid in thirty cases of craniocerebral injury treated in the surgical clinic of the University of Milan. The examinations were made from forty-five minutes to forty-eight hours after the occurrence of the trauma. The blood chlorides were found to remain within approximately normal limits. The sodium chloride content of the spinal fluid was considerably decreased. In one case it fell to 4.92 per cent (normal 7.32 per cent). Severe craniocerebral lesions were followed by a greater decrease than mild lesions.

The author attributes the changes noted to an abnormal osmotic relationship established between the blood and spinal fluid as the result of a change in meningeal permeability following the craniocerebral lesion.

PETER A. ROSI, M.D.

Moniz, E The Localization of Brain Tumors by Arterial Encephalography (La localización de los tumores cerebrales por la encefalografía arterial). *Rev. oto-neuro-oftalmol. y de ciruj. neurol.*, 1931, vi, 1455

The author describes a method of encephalography in which he exposes the common carotid and injects opaque fluid into it. He uses sodium iodide, injecting from 6 to 7 c.c. of a 23 to 25 per cent solution for a single roentgenogram and from 7 to 10 c.c. for stereoroentgenography. In the cases of children who bear the injection very well, he uses 2 or 3 c.c. The injection is always made on both sides as a comparison of the two sides is generally necessary for a correct interpretation of the roentgen findings.

The method is contra-indicated in advanced arteriosclerosis and the cases of patients with uræmia or severe intoxication. Motor complications or transitory hemiplegia or aphasia may develop, but generally can be relieved quickly by lumbar puncture or the application of an ice bag to the head. Of the fifty cases in which the author has used the procedure described, complications developed in only two and in these they were transitory.

Tumors are localized by means of the characteristic displacement of the arteries. The article contains encephalograms characteristic of tumors in various parts of the brain.

The author claims that his method of arterial encephalography is easier and simpler than ventriculography and less trying to the patient. Sometimes signs of intracranial hypertension are overcome by the intra-arterial injection of sodium iodide. The method is associated with less danger than ventriculography and reveals the sites of tumors much better than the latter procedure. Even the nature of certain kinds of tumors may be determined by arterial encephalography. Another advantage

of the method is that the interpretation of cerebral arteriograms is generally much simpler than the interpretation of ventriculograms.

AUDREY GOSS MORGAN, M.D.

Staehli, J Eye Symptoms of Brain Tumors (Augensymptome der Hirntumoren). *Schweiz. med. Wochenschr.*, 1931, xi, 702

The author deals with the large subject of brain tumors and their eye symptoms from two points of view. He takes up first the eye symptoms which are characteristic of the different types of brain tumors and then discusses brain tumors and the eye symptoms which are characteristic of each type.

Cerebral tumors cause choked disk and optic neuritis in 80 per cent of cases. These signs are absent only in cases of tumor situated in the motor region of the cortex, tumor of the corpus callosum, and metastatic tumor of the base. Vision often remains unaffected for a long time. In 20 per cent of cases of cerebral tumor, homonymous hemianopsia is caused by involvement of the visual tract. In 50 per cent of the cases the tumor is situated in the occipital lobe. In 8 per cent of these, transcortical disturbances such as alexia, optic aplasia, and optic hallucinations occur. In the other 50 per cent of cases of cerebral tumor the neoplasm is situated either in the base, where it causes tract hemianopsia and usually other basal symptoms such as multiple cranial nerve paralyses, or in the region of the internal capsule where, in addition to the tract hemianopsia, it usually causes hemiplegic phenomena. In contrast to its incidence in cases of cerebral softening partial hemianopsia is rare. Basal tumors in the region of the chiasm produce bitemporal hemianopsia as do hypophyseal tumors. In 33 per cent of cases, cerebral tumors cause disturbances of the eye muscles. Paralysis of the oculomotor or abducens nerve is often the first sign suggesting a basal tumor. Isolated paralyses of these nerves are relatively frequent. Unilateral involvement of the optic and olfactory nerves indicates the presence of a basal tumor with practical certainty. Isolated trochlear paralysis is very suggestive of a tumor of the region of the corpora quadrigemina or the pineal gland. In contrast to cases of cerebellar tumor nystagmus occurs but rarely. Conjugate paralysis of the eye muscles is also uncommon. However, the latter occurs if the tumor is situated in the posterior fossa of the skull and causes pressure upon the pons or if it involves the region of the corpora quadrigemina or pineal gland. If the trigeminal nerve is injured it is justifiable to suspect a basal tumor. If exophthalmos is present, growth of the basal tumor toward the orbit is probable.

Cerebellar tumors cause choked disk and optic neuritis in 90 per cent of the cases and soon affect vision. Other typical symptoms are eye muscle paralyses and nystagmus. Hemianopsia and transcortical disturbances are considerably rarer. Of the eye muscle paralyses paralysis of the abducens

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS CRANIAL NERVES

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MISCELLANEOUS

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SPINAL CORD AND ITS COVERINGS

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SPINAL CORD AND ITS COVERINGS

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later he had a severe attack of vomiting and thereafter rapidly recovered without operation

The author discusses the principal diagnostic signs of abscess of the lung and calls attention to the fact that in paracentesis there is danger of causing an empyema or missing the abscess. He states that if lipiodol is to be used to define the cavity in the roentgen examination it is best injected by the intratracheal method

Bressot believes that surgical intervention is indicated in the cases of all patients with pulmonary suppuration in whom the symptoms of infection and the roentgen signs do not show distinct improvement under medical treatment at the end of two months after the onset of the condition. The only operations which are curative of lung abscess are pneumotomy and pneumectomy. Bronchoscopic aspiration and treatment by collapse serve only as complements to direct attack on the lung. KELLOGG SPEED, M D

Lilienthal, H. Operative Treatment of Abscess of the Lung. *Surg., Gynec. & Obst.*, 1931, lxx, 788

The infection causing pulmonary abscess may reach the lung through (1) an injury, (2) the blood vessels, (3) the lymph channels, or (4) the airways. The types of infecting organisms are many, and any lung abscess after the first few days is likely to become secondarily infected. Besides the ordinary organisms, gas-producing bacteria and spirochaetes are often present. Extensive and rapid necrosis frequently results with alarming hæmorrhage. The history must be considered carefully, particularly with regard to the possibility of a foreign body. There may be no chest symptoms and no cough. Occasionally a very foul breath is the first indication of the condition. Physical signs are misleading and scant. Chief reliance must be placed on the findings of X-ray examination. Anteroposterior or postero-anterior roentgenograms or both must be made with the patient erect and lying on the normal side. A full lateral roentgenogram should also be taken. Bronchoscopy is of great aid, and lipiodol may be helpful in the diagnosis. Aspiration should never be performed except at the time of operation after exposure of the ribs.

Not all abscesses of the lung require operation. Many of them heal spontaneously. The greatest proportion of the latter occur in children. Cerebral embolism or embolic metastasis to other organs may occur at any time. An abscess may rupture into an interlobar fissure or if it persists for a long time its walls may become epithelialized so that extirpation is necessary for cure.

The abscess should heal normally by granulation. Persistent bronchial fistulæ should be closed as they may favor hæmorrhage or amyloidosis.

The development of the abscess should be carefully watched by frequent X-ray examinations. If these and the symptoms indicate retardation of the process, operation should be delayed. Bronchoscopy is helpful, but should not be continued in the absence of improvement. Pneumothorax, if used, must be

induced with low tension and should be abandoned if there is no improvement.

Abscesses in the upper thoracic region should be drained by an approach through the axilla with removal of 3 in. of the third or fourth rib. Local anaesthesia is the anaesthesia of choice. If there are no adhesions between the parietal and visceral pleuræ, the wound should be packed and opening of the abscess delayed for from three to five days. At the end of that time the exact location of the abscess should be determined by aspiration, the needle left in place, and the abscess opened alongside it. The abscess should be explored carefully and then packed. Recently the author has used gauze soaked in anti-gangrene serum for the packing. After a week or ten days the gauze should be replaced by soft rubber tubing. There should be no hurry in permitting the wound to close. If adhesions are found at the first operation, the abscess should be opened then.

For the drainage of abscesses in the middle and the posterior portion of the lower part of the chest the eighth and ninth ribs should be resected.

Abscesses near the hilum are difficult to approach. The author usually locates them accurately through a large thoracotomy and drains them later.

The patient's head should always be lower than his hips. Manipulations should be gentle. Packing should not be too firm. Drainage should be well above the lower limit of the abscess.

FRANK B. BERRY, M D

McGillcuddy, O. Acute Generalized Bronchiolectasis with Bullous Emphysema. *Ann. Otol., Rhinol. & Laryngol.*, 1931, xl, 1146

The author reports a case of acute generalized bronchiolectasis in a child two years old who was admitted to the hospital on account of difficulty in breathing. The history was negative. Examination revealed slight cyanosis and respiratory difficulty evidenced by intercostal retractions and an expiratory grunt. On percussion, hyperresonance was noted. The temperature was 99 degrees F, the pulse 130, and the respiration 45. X-ray examination showed overaeration of both lungs and circular shadows. Bronchoscopic examination demonstrated an extensive mucopurulent bronchitis.

Oxygen had little effect on the cyanosis and death soon resulted. At autopsy, generalized bronchiolectasis with bullous emphysema was found.

A few similar cases have been reported in the literature. Pneumonia seems to be the chief factor favoring dilatation. A common finding is an extensive peribronchitis of the infiltrating or necrotic type with loss of the bronchial elastic tissue and invasion of the muscle by inflammatory elements. This is especially important in the presence of a bronchial stenosis. WILLIAM J. TANNENBAUM, M D

Hedblom, C. A. The Treatment of Empyema. *J. Am. M. Ass.*, 1931, xcvi, 1943

Empyema may be classified as pyogenic and tuberculous. The former may be acute or chronic,

SURGERY OF THE CHEST

CHEST WALL AND BREAST

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H M B M D

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JOHN J. MALONEY, M D

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2. Its diagnosis calls for the closest cooperation between the clinician, the roentgenologist, and the oesophagoscopist.

3. In the past it was seldom diagnosed clinically, but as the result of the development of roentgen examination and oesophagoscopy, and as the result of examinations for it in cases of substernal or epigastric pain, it has been found to be considerably more frequent than was formerly assumed.

4. As the diagnostic criteria are yet incomplete, the roentgenologist has an important duty to perform in their further development.

ADOLPH HARTUNG, M D

Ginkovskij, V. Contributions on the Question of Resection of the Thoracic Portion of the Oesophagus (Beitraege zur Frage der Resektion des Brustabschnitts der Speiserohre). *Zap med sek Odessk nauk pri U A N Torarista*, 1930, ii, 33.

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escapes from the lungs. By this means the bellows may be kept in uninterrupted action. To prevent overdistention of the lungs the visible lung on the side being operated upon should never be distended to more than about half its normal volume. This quantity of air assures adequate pulmonary ventilation. The air pressure in the lungs and the inflation of the lungs depend upon the frequency and degree of closure of the vertical portion of the glass tube. The use of a manometer is avoided in order to permit the greatest possible individualization in the artificial respiration. Large variations in pressure must be prevented and the pressure raised or lowered gradually.

Pleural anaesthesia is obtained by the previous injection into the pleural cavity of 4 c cm of a 1 per cent novocain solution per kilogram of body weight.

The technique of the thoracotomy is described in detail. For interventions on the oesophagus below the bifurcation a transpleural operation should be done on the left side, and for operations above or at the level of the bifurcation the right transpleural route recommended by Dobromyslov in 1903 should be used. Of all incisions, the intercostal incision and the incision of Zaajer are best. The operation is materially simplified by preliminary phrenicotomy or exeresis. After the thoracotomy, the pleural cavity must be carefully examined, bleeding controlled, the incision closed in three layers, and the air withdrawn from the pleural cavity. When an oesophageal carcinoma is found to be operable at exploratory thoracotomy, the radical operation should be done immediately. It must be borne in mind that different methods must be used for tumors at different levels.

In experiments on animals the author has found the following technique of value in the resection of the cardiac portion of the oesophagus: (1) left phrenico exeresis and jejunostomy, (2) several days later, a T-shaped skin incision on the left side with the horizontal portion of the incision parallel with the costal margin and the vertical portion along the posterior axillary line, reflection of the skin flap, and resection of 10 cm of each of the sixth to the twelfth ribs, (3) opening of the pleura by a similar T-shaped incision, (4) a frontal incision of the diaphragm, (5) mobilization of the stomach and its displacement into the thoracic cavity with elevation of the end of the oesophagus together with the tumor and the cardia and approximation and tight suture of the pleural folds behind it, (6) extrapleural oesophageal resection and oesophagogastric anastomosis, and (7) careful suture.

In cases in which the tumor is in the region of the bifurcation or above it, a two stage operation consisting of cervical oesophagostomy and gastrostomy in the first stage and right-sided thoracotomy and total oesophagectomy in the second should be considered.

On the basis of his experience and from a study of the literature the author concludes that especially

and the latte with o w thout chm l ev d nce of tuberc l sis f the l ng

In acute py g nic mpyema the fund mentals f t eatm nt a e compl t d g and uppo t e measures The drat age should b inst t i d ealy and maintai d unt l the cavity has been obl tated by re xp son of th lung In the early stages of ac te mpyema b f r th l ng and m d a t um are adher nt the pleur lca ties a t so eand op n dran ge l wers the e p t r y f ti f the other l ng Therf r losed dra age whch d s not nterf e with th re p ratory c pa ty i th method of ch e alle rly cute c s s a d those of sever ly ill p t ents and infant

The method is v ry s mple The t b s n e t d nto th h st th o gh trocar Pus is aspirated (f om oo to goo c m f th c ty sl g) ad the c ty then irrigated fir t w th salne sol on and later th blonn ted soda until the solut n ret rns lear No air s permitt d to e t th ch st ca ty The gat on is d nee ery t o h u s If th i a fistula saline luti n is ed The r g t i a c ntinu d until the c ty is obl tated o th re no furthe decrease in tss e Rib re ect n then d n

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Will m J T N M M D

Licht n t l n H Th Clinical a d P thol gical lct u f P lmary T mo s f th Pl a (D Al k d i th l g d p m e M t mo) Dent k Z k f Ch 93 x 9

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dr mata ang mata) seldom p od c clinical man f tat on and the of re e f l t t l cal impo ta c On the oth r hand the clinical differentiat n of mal g a t tumors of the pleura from mal g a t tum s of the lun is essent al The m st comm mal g nt t mo s of th pl u a are the so-called end theli mata the cour e of whch resembles the cou se f an xud t e tub ulous pleun y H e e n c ntrast t tub rculous pl un y a p r t of th ex d te does n t r l e e th d y p r d s foll ed by mmed at re c cumul t n f the e u date Implantati metast ses may occu at th te of punctu e Cyt dgnos s i d f cult ad un lable R e tge e m at n d c l s s be y hom gene us shad cast by th x d te Pulmo n ry tumor can b rul d t o ly afte r m al of th lu d nd the nd c t n of a dgnos t p e m tho a

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r Supe f all e t e d n g t m s The u d t o d l t t e n d cy to a d m ta t a s Th e ca u th s m c l n al p ctu a ple l endotheloma s a Very m l g a t d tru t e ple r l s comat th pl mon ry n f l t r n h a e a manifested first by haem pty Th diff r tation from p m y pulm nary pl m ery difficult In th r entgen gram b o d ha ed implantat n o th th a c all u g r s t s pl u l t u m r

3 H t log lly m l g nant b t c l m ally be g n s a c mata The are de gnat d i th l i t e r a t e s g uant tum rs f th pl ur Histologically th y are so fibr us that they somet m s s gge t fibrosa c m ta The clinical m f stat o a esse tally th se f d splac m nt f the hea t a d i n g s Th n l d s d f the hest ally h s m k ed bulg g Fe e h b e n ted nly o e case The t m h ct ed o tgenologically b the g e t d e ty and te t f i t s shadow h h a r the sh rp b r d s If d i g o d at the p ope t m the t m s r e m able t s gery

I co lus n the author r p o t case f g t t m of th pleu wh h w s under b r v t f se y ars a d w s assoc ted w th m s th ma p e d i r l y t ca H L ex (2)

ESOPHAGUS AND MEDIASTINUM

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Pleural anaesthesia is obtained by the previous injection into the pleural cavity of 4 c.c. of a 1 per cent novocain solution per kilogram of body weight.

The technique of the thoracotomy is described in detail. For interventions on the oesophagus below the bifurcation a transpleural operation should be done on the left side, and for operations above or at the level of the bifurcation the right transpleural route recommended by Dobromyslov in 1907 should be used. Of all incisions, the intercostal incision and the incision of Zaayer are best. The operation is materially simplified by preliminary phrenicotomy or exeresis. After the thoracotomy the pleural cavity must be carefully examined, bleeding controlled, the incision closed in three layers, and the air withdrawn from the pleural cavity. When an oesophageal carcinoma is found to be operable at exploratory thoracotomy, the radical operation should be done immediately. It must be borne in mind that different methods must be used for tumors at different levels.

In experiments on animals the author has found the following technique of value in the resection of the cardiac portion of the oesophagus: (1) left phrenico-exeresis and jejunostomy, (2) several days later, a T-shaped skin incision on the left side with the horizontal portion of the incision parallel with the costal margin and the vertical portion along the posterior axillary line, reflection of the skin flap, and resection of 10 cm. of each of the sixth to the twelfth ribs, (3) opening of the pleura by a similar T-shaped incision, (4) a frontal incision of the diaphragm, (5) mobilization of the stomach and its displacement into the thoracic cavity with elevation of the end of the oesophagus together with the tumor and the cardia and approximation and tight suture of the pleural folds behind it, (6) extrapleural oesophageal resection and oesophagogastric anastomosis, and (7) careful suture.

In cases in which the tumor is in the region of the bifurcation or above it, a two stage operation consisting of cervical oesophagostomy and gastrostomy in the first stage and right-sided thoracotomy and total oesophagectomy in the second should be considered.

On the basis of his experience and from a study of the literature the author concludes that especially

in case of thoracic oesophageal carcinoma the definition of the ling may be expected if surgical technique is given in time. The technical difficulties are serious. It is therefore extremely important by means of energetic propaganda to make the public but particularly the general practitioner aware of the possibility and efficacy of radical operative treatment of carcinoma of the thoracic position of the oesophagus and of the necessity of operating in such cases as early as possible. Whenever the patient's general condition permits an exploratory thoracotomy which is not a dangerous procedure should be done in every case of carcinoma of the thoracic oesophagus. If the tumor is found to be definitely operable the radical procedure should be done at once. If it is inoperable the intervention should be limited to exploration possibly by the pleurotomy procedure of Mayer.

The article contains the pretexts of the author's experiments on dogs and the history of the article and is supplemented by a bibliography.

J. Kozminsky (Z)

J. S. P. M. Medical Emphysema 46
S. 93 176

The author reviews the literature on emphysema of the mediastinum and reports several cases of the condition.

Mediastinal emphysema results in increased intramedastinal pressure threatening the circulation of the mechanical interference with the circulation of the compressed of the large vessels entering both sides of the heart. The outwards gases depend upon the degree of the blockage of the circulation.

Mediastinal emphysema may result from increased escapes of the lung perforation in the long perforations of the chest wall, artificial pneumothorax or operations in the pleural cavities, wounds of the larynx, trachea, neck, neck, diaphragm, rupture of the oesophagus and rupture of the emphysema of the mediastinum.

Characteristic signs and symptoms are extreme cyanosis and dyspnoea, a palpable congestion of the superficial cervical veins and local blood pressure. There may also be subcutaneous emphysema.

The roentgen findings are not characteristic but are helpful. In the vascular markings of the lung have been seen. The borders of the lungs may be widely separated in the mediastinal shadow. A streak may appear between them.

Treatment is to be considered from two aspects: that of stopping the source of the air and that of giving an outlet to the already accumulated the mediastinum. The chances of recovery are not good.
J. D. EL WILLY M.D.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Lower, W E, and Hicken, N F Interparietal Hernia *Ann Surg*, 1931, LXXI, 1070

The term "interparietal hernia" is applied to a group of unusual herniæ located in the inguinal region between the various layers of the abdominal parietes. Anatomically, these herniæ may be classified as properitoneal, interstitial, and superficial.

Movnihan, Halstead, and many other authorities agree that all properitoneal herniæ have two loculi, one of which extends down into the inguinal or femoral canal. However, the authors have collected fourteen authentic cases in which there was only one loculus. Therefore a properitoneal hernia may be independent of the femoral or inguinal canals. Such herniæ of the properitoneal type usually pass upward and outward toward the anterosuperior spine of the ilium, but may also pass backward and occupy the iliac fossa or downward and inward to the side of or in front of the urinary bladder.

Properitoneal herniæ are more common in males than in females because of the greater frequency of congenital anomalies in the inguinal region of the male. The right side is involved more often than the left because of the greater frequency of congenital anomalies associated with the later closing of the right vaginal process.

There is no pathognomonic sign or symptom of the condition. Fully 90 per cent of the patients present the clinical syndrome of acute intestinal obstruction. In some cases a reducible inguinal or femoral hernia has been present for a long time and following an apparent reduction the patient becomes nauseated and vomits, the abdomen becomes distended, and the bowels become constipated.

In interstitial herniæ the sac burrows between the layers of the abdominal wall and may be found between the transversalis muscle and fascia, between the transversalis and internal oblique muscles, between the fibers of the internal oblique muscle, or between the internal and external oblique muscles. The last is by far the most common position. Many authorities believe that these herniæ also are bilocular, but the authors are convinced that both monolocular and trilocular forms occur.

Interstitial herniæ are three and a half times more frequent in men than in women. Their outstanding clinical symptoms are those of intestinal obstruction. When a patient complains of pain in the inguinal region, nausea, and vomiting, and examination reveals an ectopic testicle and a palpable mass above Poupart's ligament, an interstitial hernia should be suspected.

The sac of a superficial inguinal hernia descends into the inguinal canal, then through the external

inguinal ring, and then spreads out between the aponeurosis of the external oblique muscle and the skin. It may pass laterally toward the anterosuperior spine of the ilium, upward and medially toward the umbilicus, or downward over Poupart's ligament to a point directly over the femoral ring. The first position is the most common.

For the repair of an interparietal hernia the authors prefer the combined abdomino-inguinal route used by Movnihan if there is evidence of bowel strangulation. EARL O LATIMER, M D

Pearse, H E, Jr Strangulated Hernia Reduced *en Masse Surg, Gynec & Obst*, 1931, LII, 822

Pearse reports a case of strangulated inguinal hernia reduced *en masse*. He defines the condition as the displacement of a hernial tumor without relief of the strangulation.

Reduction *en masse* of a strangulated hernia is rare, occurring in only 0.0075 per cent of all herniæ and in only 0.3 per cent of strangulated herniæ.

In a study of 190 cases the condition was found to be most frequent in middle-aged men who had had a right-sided inguinal hernia for many years.

As a rule, the strangulated mass is forced to a properitoneal position, but occasionally the accident has occurred by rupture of the sac and displacement of only its contents. In 60 per cent of the cases the physician is responsible.

The chief factor favoring the accident is the presence of a preformed properitoneal sac. Such a pouch is probably formed most frequently by the use of a poorly fitting truss.

The diagnosis is made from a history of persistent symptoms of intestinal obstruction after the apparent reduction of a strangulated hernia. Local signs of the disorder are often absent, but in some cases a tumor may be palpated above the internal inguinal ring or in the lower quadrant of the abdomen.

Early operation is indicated as in cases of femoral hernia the condition has a mortality of 70 per cent and in cases of inguinal hernia a mortality of 40 per cent.

The possibility of reduction *en masse* of a strangulated hernia is one of the reasons for the abandonment of taxis. JACOB M MORA, M D

Bréchet and Nové-Jossierand Pneumococcic Peritonitis (Péritonites à pneumocoque) *J de chir*, 1931, LXXXVIII, 533

Pneumococcic peritonitis was first described by Bizzolo in 1885. In 1886, Cornil reported a case associated with pericarditis and bilateral pleurisy. The study of the condition from the bacteriological and pathological standpoints seemed concluded with

the article published by Lenormant and Lecé e in 1905. Recently there has been considerable discussion of the surgical treatment.

The disease is essentially one of childhood, being most common between the fifth and tenth years. Seventy-five per cent of the subjects are female. In very young infants and adults the peritonitis is a complication of pneumococcal infection, whereas usually in the lung. The pneumonia is apparently contemporaneous with the peritonitis and in the early stages makes the latter condition more apparent. Americans and Italians believe that angina frquentia the source of the infection. In peritonitis the pneumococcus of Type 1 predominates whereas pneumonia pneumococci of Type 3 and 3 predominate. The naobcfrms are the most numerous.

As the result of early surgical intervention the initial phases of the peritonitis are now known. Melchior operating in the twelfth hour found enlarged mesenteric lymph nodes and a miliary like effusion of the serous surfaces. The exudate rapidly became purulent.

The peritonitis is localized or diffuse. The localized type is found twice as frequently as the diffuse type. In om cases the less localized type may be significant. The patient quickly dying of pus. Others they reach a stage of a fibrous exudate. More commonly the abdominal contents are a large quantity of pus in which the intestinal loops float without adhesions. The pus is yellow greenish yellow or grey. Occasionally there are adhesions isolating the exudate in multiple widely spread pockets.

In the typical localized form there is a collection of pus cupping the true pelvis and the greater portion in the middle of the left of the midline. Less typical cases are seen; the ulcer sac of Douglas or the right iliac fossa.

The infection is believed to originate most often in the spharynx. The peritonitis may be invaginated or may be limited by a general infection with other localizations. Trauma of the infection through the diaphragm is rare. Invasions of the peritoneum through the genital tract and uterine occurs but is difficult to prove definitely. In a few cases the source of the peritonitis has been found to be pneumococcal infection of the stomach, testes, appendix, Meckel's diverticulum, and rectum to the thigh, bladder, and the rectum.

The onset of the symptoms—abdominal pain, vomiting, diarrhoea, and fever. Occasionally sudden death occurs. In the history however there is a premonitory diarrhoea, pain in the right lower quadrant and some colic onset. Signs of peritonitis are abdominal pain, rigidity, suggestion of tuberculous infection. When the infection is accompanied by septicæmia, peritonitis may be a fairly marked. In the septicæmic form death occurs after from one to seven days from cardiac arrest. The generalized peritonitis

purulent forms are more prolonged, the patient survives from eight to twenty days. The mortality in the two types of cases is respectively 86 and 75 per cent.

The symptoms of localized peritonitis appear after a remission from the initial acute phase. The remission lasts for from six to fifteen days and is accompanied by diarrhoea. Gradually micturism develops with the signs of a localized intraperitoneal exudate. The temperature rises and becomes febrile type with chills and sweats.

After apparition of the surgical drainage relapses are not uncommon. Often fistulae persist and the pneumococci can be demonstrated in the discharge for long periods—thirty years in a case reported by Zimmermann.

In the differential diagnosis appendicitis must usually be considered. In appendicitis the local symptoms and signs (pain, rigidity, tenderness) are definite and the general symptoms are relatively insignificant where in peritonitis the general symptoms of grave intoxication while the abdomen remains quiet, suppuration and ileus, vomiting, diarrhoea, with little peritoneal exudate often suggests small gastroenteritis. A purulent collection of material in a phlegmon in the ileum or in the pelvis.

The prognosis of localized peritonitis is quite favorable. According to various reports the incidence of recovery is about 8 per cent. Recovery to excretion of solid food is not rare.

Some regard the belief that during the first three days of the disease the best treatment. Others have objected to it because at this time the mortality is very high. There is usually nothing in the abdomen to be evacuated and the drain may introduce secondary infection. However, it is important to associate with the danger that an appendicitis may be overlooked. While the nature of the infection is diagnosed at the time to some surgeons close the abdomen completely.

After closure of the acute initial symptoms may change the time of the cure. Cases of evacuation of purulent collection to the thigh may follow.

ALB F D G M D

Roche H L and Gué in R: A Case of Peritonitis (The Ontario Medical Association, 1934, 44, 3)

Treatment of the acute form is not common, less rarely diagnosed. Fildor state that in 4 cases diagnosis was made by x-ray. The diagnosis is especially difficult in the strictly abdominal cases. In the other sites it is possible to establish a diagnosis. Let us distinguish the type of the radiation of the tumor (1) the combination of the irreducible hernia (2) the combination of the empty hernia (3) the radiation of the hernia. The type is the most common. The type is also a type of the radiation of the hernia (4) the radiation of the hernia.

In the case reported by the author the radiation of the hernia was combined with a irreducible

hernia The patient was a man fifty-nine years old who was suffering from a large scrotal hernia on the right side which he had kept reduced by a truss for several years The hernia suddenly became irreducible and the patient was seized with nausea and abdominal pain localized in the right iliac fossa There was no fever The pulse was slightly accelerated The condition was diagnosed as strangulation of the omentum with possible omental torsion in the abdomen Herniotomy was performed under general anesthesia When the omentum was liberated and untwisted, purulent fluid escaped Ligature and resection of the omentum were done and drainage was established at the base of the funnel formed by the two omental layers The abdomen was closed in 3 layers with superficial drainage of the area sloping toward the inguinal canal The temperature was from 38 to 38.5 degrees C Ice was applied to the abdomen for forty-eight hours after the operation Smooth recovery resulted

Examination of the fluid revealed no bacteria The specimen of necrosed omentum showed polynuclear leucocytes in pyknosis at the base of the necrosis and pyknotic lymphocytes and hemorrhagic effusions about the necrosed areas At the margins of the latter, signs of inflammation predominated These findings might have suggested omental tuberculosis, but the intensity of the polynucleosis, the absence of the epithelioid cells, the scarcity of plasmocytes, and the absence of caseation seemed to show that the condition was an epiploitis with a cellular reaction bordering on pseudotuberculous tissue Examination for tubercle bacilli was negative

Two factors combine to produce torsion of the omentum the omental mass and chronic inflammation The omental mass is fat and heavy, sometimes even tumorous, and predisposes to the formation of an omental pedicle and consequently to torsion Some surgeons believe that the omentum may be congenitally pedicled It is hard to tell whether chronic inflammation is the cause or the result of torsion As a rule the cause of the inflammation is evident (appendicitis, pelvipertonitis, cholecystitis, or an old hernial sac) The non-adherent omentum moves on its pedicle The adherent omentum, fixed at its 2 extremities, twists upon itself The great motility of the omentum is another factor in omental torsion Sometimes as many as 10 twists are found The lesions vary in intensity from simple congestion to vascular obliteration and gangrene which may lead to rupture of the omental pedicle The clinical signs vary according to whether the torsion is intra-abdominal without or with an empty hernia or combined with an irreducible hernia Under circumstances of the first type the symptoms are those of an acute abdominal condition, whereas under those of the second they are those of strangulated hernia There may be a history of transitory pains due to incomplete torsion

The nature of the condition may be suspected from the contrast between the importance of the local lesions and the very slight general involvement In the abdominal type of omental torsion a search must be made for the empty hernial sac The condition most frequently confused with abdominal omental torsion is appendicitis However, if the patient is seen early the swelling is too large to be taken for an appendiceal abscess, and if he is seen later the general symptoms are too mild for those of appendicitis The condition is often mistaken also for torsion of other organs and for intestinal invagination Operation is indicated in all of these conditions Torsion of an irreducible hernia usually occurs on the right side

The prognosis is good if operation is done early If the condition is not treated, it may give rise to thrombosis, intra abdominal hemorrhage, rupture of the pedicle, or suppuration with general or localized peritonitis Ligation of the omentum must be done carefully Resection should be followed by treatment directed to the cause EDITH S MOORE

Czeyda Pommersheim, F Tumors of the Omentum (Ueber die Omentumgeschwulste) *Ortoskepes*, 1931, xxi, 30

Tumors of the omentum may be divided into two large groups In the first group are the inflammatory tumors These may be primary or secondary To the secondary inflammatory tumors belong the masses forming postoperatively about foreign bodies and those which result from torsion or strangulation Both primary and secondary inflammatory tumors may be of the simple hyperplastic type or result in abscess formation They may also be circumscribed or diffuse The majority of postoperative tumors of the omentum are of the circumscribed type with abscess formation, whereas the primary tumors belong to the diffuse type which are simple and hyperplastic Postoperative tumors of the omentum frequently occur about omental ligatures and after partial extirpation of the omentum They are situated on the margins rather than in the body of the omentum and vary in size from that of a walnut to that of a child's head They are round or oval, their surfaces are nodular, and they are composed of fatty tissue They are closely related to the tumors developing around foreign bodies such as needles and fish bones which have penetrated the intestinal wall

The author reports a case of postoperative omental tumor in which three abscesses developed about three ligatures applied in a previous operation, also a case of primary inflammatory tumor of the omentum in which the condition was at first believed to be a tuberculous lesion

The second large group of omental tumors are the true tumors These also may be primary or secondary The latter are usually malignant and occur either by direct extension or by metastasis The former are very much rarer, and may be either benign or malignant The benign tumors which have

been described in lude eous cy ts neu omata lymph ngi mat de mod ysts lipom t and fibr m t Th the eases f echin occ s cyst eported in the literatur may al o be included i this gr up The m igrant ru tumors of th om ntum re sarcomata with mo t v ried h stological stru t e Primary epithelial tum rs f the mentum a e e tremely uncommon nly t elve cas s havi g b en r ported

The autho reports a case of primary omental ca c oma in wh ch the diagn s as pro ed by hi tol gic l am nation on aut p y

In oncl n the uth r says that the d g o of om nt l tumo s is f eque ly difficult a d the treatment is surgical STEFAN VA (2)

GASTRO INTESTINAL TRACT

Th m J E Th Vie h ism f Ga t l E u
tl n J Am M As 93 663

Thomas gi es a b i facc unt of th p esent status of o r kn ledge of the mech n m ontroll g the mpying f th tomach and add xpermental ob rv ti ns wh h he b l ve may shed ne l ht on the mo e d p ed aspects f th s bject O r conception of th phy ol gy of gastric e c ton is n acco nt of g ad ally i crea ng mphasis n the ol f the pylo c sph cter wh ch rea head ts clma n th cid-co trol" the ry f Can on Acc d g to the l t t r the p ss g of m terna l fr m the st mach i c trolled e tively by the pylorus G st ic ev cu tio ccu s wh neve the ntra ga tric pr s e nea the pylorus e ds th res ta c de to the sph cter The gastr m t r mech n sm i dapted to stabl h th s c ndit at gul i vals or esp d g to th rhythm of g tric p n tal is S h me han m op rat g witho t regulat on wuld mpt th st m ch eg dls f th tate of d gestion f the f d o the ability f the int stines to handl It Since th doe ot o cu the mech n sm s b ou ly s b j ct to regul ton

R gul tion es lts f m t mul d et cond ti ns w th th st mach w thh ld th g str co t nts until a sat sfa t ry state f d get ha be n r ched Stimul f m sth the small int st e serve to adapt the rat f acu ti n t the fu c ton l c p c ty f the i te t ne

The regulat g m l from th the t m h re v e ted by the tat f ch m cal d ge t f the food Chem cally und gested food espec ll po t n d s l d part l s d ly a at A d so l g s it is c fi ed to the t m h s ot a gu lat g cto R gulati n fr m w th th t e t es results f om ch m cal and m h n cal t m l Th se act thro gh t o eff p th n n th my tere plex wh h pr duces m t es l n r e n the t n of the sph ct and th th o gh the va wh ch gen rates n inh b y s l x ca s a decrease f m t f ton f the t e pars pylorica clud g th sph n ter Ch m cal t mul are dum nished in effect es by nt st l pa

creatric and bilary sec etion wh ch te d f neu tralize acidity and by i test nat motily wh ch mo es th timulati g mat nal to l ss irritable seg m nts f the small bowel

The regulat ry fact rs (gastric nd intest all) te d t d lay e acustion nd re bala ced sga e t the inh rent rhyth city of the st m h

The t nu of th pyloric sph cter is determ ed chiefly by timul affect ng the stomach muscl a whole Its r v e a constant res t nce to th pa sage of chyme nd bl cks the ex t of l d part des By m s ta n ng nar wo fice it filters th ga ne cont nts and by co tra t ng when the adj c nt duoden m c ntracts it limits regu git t n

J N N W N c W M D

Konj t ny G E G triti Duod nitis d J l
niti a d T lei Signifi n e to th S rgon
(Gastrit D d itis d J l n u h Bedru
t g f d Ch ru g) B t l C d 93
cl 55 58

Gastr d odenit i ec gnized s a ell def ed i f m m tory c nd ton of the ga tric a d duod l m cosa Th es o obje ti n to c ll ng t catarrh f th st m is und rst d t me n n flamm t n of the ent e gla dul r gn that is the l g epu th lum the gl nds nd th sate tit l t ssu s and to i d cate that ch nge i the nt rst t i t us r dom n te th patholog co an tom l p oc s A l r c p to f the patholog co anat m l and i g s es ent al t a und r ts d g of th de elopm e t f the d se se nd the b lity to judge its cl scal m f st t s

O d nary g strit s do s n t al y s mea d se muosal catar h A a ul o ly the ntral po t n th r g n f the pyl ri gl nd s s vol d and th r g n f the f d e gla ds s f e quently free A p g n t s may o easo ally ccu as re ult of l g tand ng a trum inflamm t Acute gastrit s pr d e d f n te sympt ms It i a recent e d t e flammat ry o d t n chara tenized by infiltrat n f th muc a by f b r l uccocy t de d ge e t ch g s of th p th l a stru ctu s p all the p r chyma a d th f rmat n f o Chr i gastrit is th seq la f r the par t e st f t a ac te mucosa flamm t The pe d ty f th l cal man f ta t o s r pond to pe t d n f m m t ry att k What st e f th g tr m sa ppl also t th muc memb a f th d ode l bulb C stro d de t i a path l g co at m c l and patho l g copy ol g l n ty

The uth n t d se the lat o of g stro d d t t the typ cal d de f f r d f g t t us to ca c ma f th t m h l l say th t the typ cal d od n l l c p t an l f m m s ry d stru ct e p oc s wh ch d d f m th m coal f ce t th d r ths l l bel es th l i t e o l of p p t e l f th j u m as the ac t e os j t t t styp cal sth acute ros g t i s The po l lity f ca m n g from th h n e ga trit i menti ned

With regard to the etiology of ordinary gastritis and duodenitis it is considered certain that injurious factors acting on the gastroduodenal mucosa from without and carried by the blood stream must be considered. On this basis it is possible to differentiate an exogenous and an endogenous gastritis and duodenitis. Both causes may act together, and constitutional factors may also play a role.

In acute and subacute gastritis there is pain which sometimes is as severe as that of perforative peritonitis. Pressure and a feeling of fullness are rarely absent. Hemorrhage frequently occurs.

The treatment of chronic gastritis and duodenitis is medical rather than surgical. Resection of a gastric stomach without ulcer gives poor results. The author urges that the recent, unquestionably exaggerated eagerness to treat ulcer surgically be curbed. As erosive gastritis and duodenitis are considered the early stages of typical ulcer formation, effective prophylactic treatment is possible. However this should consist of medical rather than surgical measures. In the study of postoperative gastric disturbances, gastritis, duodenitis, and jejunitis must be given consideration. The demonstration that mucosal inflammation may represent an important cause of operative failure shows the illusion of exaggerated expectations as to permanent results from surgical treatment and warns against the overvaluing of surgery as causal therapy of gastroduodenal ulcer. Moreover, it emphasizes the necessity for the strictest indications in the surgical treatment of gastric and duodenal ulcers and of appropriate treatment after operation. With due recognition of the results of resection, the fact remains that a mutilating operation such as resection cannot be considered an ideal method of treatment. Resection will always be the last resort for cases of chronic ulcer in which medical treatment is unable to effect a cure. The therapeutic goal must be the combating of gastritis and duodenitis at the proper time and in the proper manner by medical measures to prevent the development of a chronic ulcer.

L. DUSCHL (Z)

Fairley, N. H., and Kilner, T. P. Gastrojejunal fistula with Megalocystic Anemia Simulating Sprue. *Lancet*, 1931, CCXXI, 1335.

The authors report three cases of gastrojejunal fistula which were admitted to the Hospital for Tropical Diseases in London with symptoms that were very similar to those of sprue. Chief among the latter was anemia of the megalocytic type. This type of anemia is almost constantly present in sprue.

The explanation advanced by the authors is that in sprue the anemia is due to faulty absorption resulting from the involvement of the gastrointestinal tract and in cases of fistula it is due to faulty absorption caused by the short circuiting.

The investigation of the cases herewith reported emphasizes the fact that the X-ray diagnosis of gastrojejunal ulceration is extremely difficult. In

one case, dilatation of coils of proximal jejunum was demonstrated when the presence of an ulcer was doubtful.

The anemia in these cases responded to the administration of large quantities of liver or vitamin and the standard high-protein, low-fat low-carbohydrate diet recommended by Fairley in 1930.

The clinical picture so closely resembled that of sprue that in one case X-ray examination was not made until the patient had been under observation for nearly three months. The presence of free hydrochloric acid in all of these cases, even in one in which a gastric carcinoma was present, was against the diagnosis of sprue or pernicious anemia.

A notable feature was the conservative type of operation performed in the two cases of ulcer, which gave such excellent results.

ROSCOE R. GRAHAM, M.D.

Leriche, R. The Pathogenesis of Postoperative Peptic Ulcer (Pathogénie de l'ulcère peptique post-opératoire). *J. de chir.*, 1931, XXXVIII, 465.

In an article of twenty-five pages Leriche discusses the etiology and pathogenesis of peptic ulcer, of which postoperative ulcer is only a phase.

The histological study of gastric ulcer has contributed only one fact of interest viz., that the lesion is almost invariably associated with an atrophic gastritis in which the mucosa becomes entirely mucus secreting.

The contributions of bacteriology are summarily dismissed by the author.

Animal experimentation, initiated by Schiff in 1846, has added nothing to our knowledge of spontaneous ulcer in man. Chronic lesions comparable to those occurring in man have been produced, but the accompanying functional disturbances, hyperchlorhydria and hypersecretion, have been invariably absent. In other words, it has been possible to produce the lesion but not the disease. More enlightening are experimental ulcers in man, i.e., postoperative ulcers.

The facility with which most ulcers heal when the gastric secretions are modified by surgical or medical means suggests that the lesions are not of bacterial origin. When ulcers fail to heal or when they recur quickly after treatment it is evident that the functional pathology of the stomach has not been modified by the treatment. Essential in the etiology of ulcers appears to be the change of the secretion, which is manifested as hyperchlorhydria and hypersecretion late in digestion.

Topographically, ulcers are limited to the motor portion of the stomach and to the duodenum above the ampulla of Vater. These two segments are both lined by mucous glands and have an alkaline reaction. It is probable that the protection afforded the mucosa against the action of the gastric juice by the mucus depends on the alkalinity of the secretions of these segments. Exact knowledge is lacking because the chemistry and physiology of mucus have been little studied. It is certain, however, that

length which, when stained with Mallory's connective tissue stain, had the appearance of embryonic muscle elements

The histological interpretation of the tumor was the same as that of Gosset and Masson who considered the neoplasm in a similar case to represent the secondary myosarcomatous degeneration of a fibromyoma. The authors believe that the schwannoma is a mesodermic proliferation which chronologically is very embryonic, but morphologically is typical

To assure the removal of independent secondary nuclei, they advise resection of from 4 to 5 cm of the gastric wall around the edges of the tumor

W H MARTINEZ, M D

Hernando, T The Beginning of Cancer of the Stomach (*¿Como empieza el cáncer del estómago?*) *Prog de la clin*, Madrid, 1931, xix, 785

Cancer of the stomach is very frequently preceded by gastric ulcer or chronic gastritis. According to some American reports, the incidence of these pre-cancerous diseases is 72 per cent, but according to European reports it ranges from 3 to 10 per cent. Pathological anatomists report a very high incidence. The differences in the statistics probably depend on whether they are made by clinicians or pathologists and on the difference in the opinions of pathologists as to when the cells at the border of an ulcer become cancerous.

In 296 of the 405 cases reviewed by the author there was a short history, in 93, a long history, and in 16 a remote history, of digestive disturbance followed by a free interval before the symptoms of cancer developed. Of the patients with a short history, 41 had had symptoms for from one to two years, 93 for from six months to a year, and 162 for less than six months. It is probable that the 16 with a remote history and the 109 with a long history had had ulcer or chronic gastritis. In a few cases the cancer of the stomach was secondary to cancer of the uterus, breast, skin, colon, or larynx. In 1 case the tumor was associated with multiple lipomata.

The first symptom reported varies greatly. In 78 cases it was a loss of weight. Loss of appetite, alone or in association with other symptoms, occurred first in 142 cases. In 6 cases there was bulimia, which in some of them persisted until just before death. In some cases there was nausea, and in smokers, intolerance of tobacco. Intense pain was rare, but in 62 cases there was moderate pain similar to that associated with other disease of the stomach. Other gastric symptoms were slight pain, cramps, a feeling of weight, a burning sensation, and eructation of gas. Dysphagia occurred in 24 cases. In 23, vomiting was the initial symptom. In 19, the disease was latent to such an extent that hemorrhage was the first sign. Six patients said that the disease began with indigestion. In 52 cases the first symptom was constipation, and in 22 cases diarrhoea. In 23 cases asthenia was the first symptom noted, and in 5 anemia. In 4 cases the initial symptom was fever.

This generally occurs at a late stage of the disease and is caused by secondary infection or the tumor. Insomnia alone or in association with other symptoms was noted first in 11 cases. In 8 cases a palpable tumor was the first evidence of the condition reported, but it is probable that the patients in these cases were of the type that ignore ordinary discomfort and say nothing about an illness until it becomes serious. They had doubtless had other symptoms to which they paid no attention. One patient came complaining of an enlarged supraclavicular gland, and three stated that oedema and fatigue were the first symptoms of the cancer.

Early diagnosis is very important. The methods of making such diagnosis are direct examination of the patient, examination of the stomach contents, examination of the faeces for occult blood, roentgen examination, and a number of tests devised in recent years for the detection of cancer in general. Among the latter is Warburg's test demonstrating that the cancer cell has a decreased capacity for fixing oxygen and a greater glycolytic power than the normal cell. Fischer-Wasels and Bungeler believe that these properties are not confined to the cancer cell, but are common to all of the cells of the body that is suffering with, or predisposed to, cancer.

AUDREY GOSS MORGAN, M D

Masuda, M Intestinal Movements in Artificially Produced Mechanical Ileus in Rabbits (Ueber die Darmbewegung bei dem am Kaninchen kuenstlich hervorgerufenen mechanischen Ileus) *Ke jo J Med*, 1931, 11, 1

The author's findings are summarized as follows.

In the examination of the intestinal coil *in situ* in the normal rabbit the registered curve of intestinal movement was always regular for more than ten hours. Only in the beginning was a slight irregularity demonstrable.

When ileus was produced, the movement of the intestinal coil above the site of the ileus was just as regular as the intestinal movement in the normal rabbit for from one hundred and four to three hundred and six minutes (average one hundred and seventy-three minutes) from the beginning of the registration. Thereafter, the amplitude of movement was increased from time to time, the curve becoming similar to that of the excised uterus. With the aid of the application of morphine and atropin or division of the vagi, the cause of the occasional increase in the amplitude was found to be peripheral and central stimulation of the vagus. This stage of stimulation lasted one and a half hours. At the end of that time, the intestinal movements gradually decreased, but not to the extent that they ceased entirely, they still continued to show increased amplitude at times. This transitional stage lasted one and a half hours. In the final stage, that of paralysis, the increased amplitude disappeared completely and the gut showed only a slowly increasing irregularly arrhythmic movement. When pilocarpin or barium chloride was added to the Locke solution

into the intestinal coil was dropped paralytic of the intestinal muscle was produced by the effect of the coil to react to these drugs.

The findings of these experiments indicate that the toxins of leus should be sought in the intestinal coil lying above the site of ileus. One ileus in acts as a stimulant and the other as an inhibitor of intestinal movement. The stimulation is due to peripheral and central stimulation of theagus and the inhibition to paralysis of the intestinal muscle.

The movement of the intestinal coil lying below the site of ileus was similar to that of the normal gut for two hours from the beginning of the experiment. In some experiments increased amplitude of movement was then noted from time to time but was not so frequent nor so marked as the movement in the intestinal coil lying above the site of ileus. In other experiments the amplitude decreased progressively until finally the intestine was completely quiet.

As the reaction in the amplitude of movement was always noted in the experiment in the intestinal coil lying above the site of ileus but not always in the experiment in the coil lying below the site of ileus it was probably due to the lumen of the intestine in the part of the intestine lying above the site of ileus which stimulate the agust.

The decrease in the movement in the intestinal coil lying below the site of ileus cannot be attributed to paralysis of the vagus or the intestinal muscle because when pilocarpine and barium chloride was added to the Locke solution in which the intestinal coil was dropped the latter reacted to the drugs although intestine in the experiment was diminished. The cause of the decrease in movement; the intestinal coil lying below the site of ileus should be sought in the automatic apparatus of the gut and its disfunction.

Louis Newer M.D.

Close H. G. Acute Intussusception in Children
A Statistical Analysis of 363 Cases. Guy
Hospital Guy Hospital London 1931, 436.

Close has reviewed 363 cases of acute intussusception in children in twelve years from 1914 to 1931. He was admitted to Guy Hospital London during the years from 1904 to 1927. In all of these cases the diagnosis was confirmed at operation. The ratio of males to females was 52:48. This is a cord with the observation of others. The patients ranged in age from two months to twelve years but 7 per cent were less than a year old. In most of those under one year the onset occurred during the first five or eight months of life. The youngest patient was eight weeks old. Tweedy has reported a case of intussusception in a baby twelve days old. Of 146 cases in which the family history was obtained both parents had had intussusception. In 68 per cent of the cases the intussusception was ileocolic and in 19 per cent it was ileocolic. In 3 cases the ewer

multiple intussusceptions. In 1 case 3 intussusceptions occurred in the ileum. There were at least 14 instances of recurrence. In 2 cases the intussusception recurred 3 times.

The mortality was about 3 per cent. Of the 111 deaths 93 were those of children under 10 years of age. Of 17 cases in which operation was performed death occurred in 11. It is significant that in case in which the patient survived in spite of gangrenous intussusception in resection was undertaken. In this case spinal anesthesia was used and a lateral nictomosis was made below the obstructing point.

Cause of death rate by years instead of for the whole series shows that the mortality has been reduced from 40 to 2 per cent. The reduction occurred largely by the improvement in anesthesia rather than a better diagnosis or improvement in technique.

HARRIS F. M.D.

Elman R. and Hartman A. F. Spontaneous Pyloric Ulcer of the Duodenum. A Case Report. J. Surg. 1931, 3.

Elman and Hartman report the development of spontaneous peptic ulcers in dogs that lasted about 14 to 21 days for thirteen or more days and were kept alive and no good end point by careful feeding and the daily intraperitoneal administration of 500 ccm of Ring solution.

These observations together with those of others indicate the importance of the pancreatic juice in protecting the duodenal mucosa. Probably theoughness of the gastric acidity by efflux of the stomach. The authors discuss the clinical application of the findings to the high gastric acidity by pylorospasm and addendal ulcer.

J. C. M. R. M.D.

G. A. Th. Treatment of Perforative Peritonitis. (T. J. M. D. 1931, 49).

Perforative peritonitis is a clinically rebellious gastric complication which is difficult to treat. The time lapse between the ulcer and perforation is usually after the perforation (Leri) to be several days. In experiments on animals the duration of the lesion has been produced in two months.

The physiological treatment of the perforation is gastric aspiration to the original ulcer. The gastric contents are removed by pyloric drainage.

Medical treatment of post-perforative ulcer is less satisfactory than medical treatment of the original lesion and cannot be performed because of the tendency of the lesion to perforate. The surgical treatment of many perforative gastric ulcers is the gastric resection. The gastric resection is the only method which is satisfactory.

The medical treatment of post-perforative ulcer should be followed with careful technical precautions.

Clamps, if used at all, should be long and flexible and protected by rubber. Clamping of the jejunum must be avoided whenever possible. Silk sutures are undesirable only because they may persist in the base of the ulcer. Buttons have been responsible for a certain number of ulcers.

The first step in the operation is liberation of the anastomosis. Excision is apt to be followed by recurrence unless it is combined with some other procedure. Closure of the gastro-enterostomy alone is inadequate and often followed by duodenal ulcer, but when it is combined with duodenectomy its results are excellent. The technique of Judd is best. Gosset describes this technique in great detail. The Finney pyloroplasty is less satisfactory, being followed by recurrence in about 14 per cent of cases. When stenosis or fixation of the pylorus is found, it may be necessary to close the old gastro-enterostomy and make a new one. Under such circumstances the Y type of gastro-enterostomy is the one most easily performed, but is to be avoided. More radical treatment is gastric resection by the method of Billroth, Haberer, or Finsterer.

Peptic ulcer following a primary resection is especially serious. In some cases only jejunostomy is possible.

Gastrojejunal fistulae should be operated upon promptly to prevent inanition. Simple closure of the fistula favors recurrence. Theoretically it is best to combine closure with one of the procedures mentioned, but statistics show the mortality of such extensive procedures to be excessively high.

Gosset gives detailed statistics covering all of the various operations ordinarily performed for recurrent ulcer.

ALBERT F. DE GROAT, M.D.

Green, T. M. The Surgical Significance of Derangement of Intestinal Rotation and Distribution. *Surg., Gynec. & Obst.*, 1931, lxxi, 734.

Many derangements of distribution of the alimentary tract may occur during fetal development. The foregut and the hindgut are practically never abnormally located or attached. Nearly all of the errors of disposition occur in the midgut portion. To explain the pathology of these errors of distribution and attachment, Green reviews briefly the normal development of the abdominal portion of the alimentary tract, its formation, its distribution, and its fixation within the abdomen.

According to Dott, derangements of distribution include (1) non-rotation, (2) malrotation, and (3) reverse rotation. The foregut and hindgut are free from anomalies of distribution because of the constancy of their development and because their development is not so complicated as that of the midgut. In the midgut, anomalies of distribution rarely occur during the first and third stage of rotation, but are common in the second stage. Their etiology is somewhat obscure.

Pathological arrangements of the midgut depend upon the direction the cæcum takes after its reduction to the abdomen. In non-rotation, it passes up-

ward into the left quadrant so that the entire colon and cæcum are arranged to the left of the midline with the entire small bowel to the right of the midline, the ileum crossing from right to left to enter the cæcum. In malrotation the cæcum passes up to the region of the pylorus and becomes attached there or further over in the subhepatic area, which prevents its elongation and descent. In reverse rotation the loops of small gut, instead of passing from right to left behind the superior mesenteric artery, pass from left to right, bringing the cæcum to lie behind the superior mesenteric artery, where it is fixed. This is a rare type of anomaly. Derangement of the third stage consists largely of an undescended cæcum in the subhepatic area, due to early fixation, or a pelvic cæcum, due to absence of fixation. These conditions may give rise to volvulus and obstruction, especially in infants. The volvulus practically produces an obstruction of the lumen of the gut. Later, disturbances of circulation and gangrene develop. In infants, the condition is not very difficult to recognize clinically, but in older children and adults its diagnosis is made with considerable difficulty. In infants it may be confused with hypertrophic pyloric stenosis as peristaltic gastric waves are seen and everything ingested is vomited. While the vomiting is of the projectile type, it does not occur so soon after the taking of food as in hypertrophic pyloric stenosis, and the vomitus contains large quantities of bile. The condition seems to occur more frequently in males than in females, and is most common during the first few days of life.

In adults, anomalous arrangements of the intestines are usually discovered during an operation for appendicitis, the appendix being found displaced. Volvulus is present in adults more frequently than is generally supposed. In infants, it must be treated immediately. Besides knowing that a volvulus is present, it is important to know, so far as possible, the nature of the anomalous distribution.

The mortality is extremely high, particularly in infants, because most of the patients are moribund when presented for surgery.

The author reports the cases of two infants and one adult. He says that malrotation and non-rotation do not interfere with health after adult life has been reached.

EARL GARSIDE, M.D.

Carnelli, R. A Clinical and Pathological Study of Three Rare Lesions of the Vermiform Appendix (Studio anatomico patologico e clinico su tre rare lesioni dell'appendice vermiciforme). *Arch. ital. di chir.*, 1931, xxx, 158.

In the first case reported, that of a boy twenty years old, there was a primary alveolar carcinoma of the tip of the appendix which had perforated. The end of the appendix was hard, and free gelatinous fluid was present, but there was no lymphatic extension. When the patient was followed up eleven years after the operation, he was found well.

The second case was that of a boy ten years old who entered the hospital with the diagnosis of acute

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the inner surface of these ducts there were a large number of small depressions (lacunæ, crypts). In the mucosa of the duodenal portion these disappeared, giving place to a complicated fold formation which varied greatly in form and degree of development. As it has never been possible, by filling the bowel with liquid under pressure, to force intestinal contents into the biliary tract, it is probable that this valve formation does not play an important role in preventing the access of bowel contents into the ampulla of Vater. However, the form and arrangement of the valves suggest that they interfere with or prevent the backflow of bile from the duodenal portion toward the higher segments of the biliary system.

The second part of the article deals with the structure of the muscles and the elastic tissue in the normal extrahepatic biliary tract. In only a minority of the cases studied could a definite increase in the muscle tissue be recognized at the point of union of the gall-bladder neck with the cystic duct. In most cases only a little muscle was present here and was arranged in the same way as in several parts of the neck. In about 85 per cent of the cases there was no suggestion of an increase in the muscle bundle at the junction of the gall-bladder neck and the cystic duct, where Luetkens is supposed to have found a sphincter. In the author's opinion it is better to consider the entire muscle coat of the gall-bladder neck and that of the cervical valves as a unit, a muscle system that perhaps is intended to take care of the closure of the gall bladder. The author's findings at the end of the common duct (muscle of Oddi) also disagree with Luetkens' assumption.

In the third portion of the article Nuboer discusses the structure of the extrahepatic biliary ducts in the presence of stones. With complete exclusion of the gall bladder from the duct system by an occluding stone or contraction the bile ducts may be come considerably changed. The chief changes are dilatation of the hepatic and common ducts and hypertrophy of the muscle of Oddi.

The article contains twenty-eight illustrations
COLMERS (Z)

De Dziembowski, S. The Value of Anastomotic Operations in Surgery of the Biliary Tract (Sur la valeur des opérations anastomosantes dans la chirurgie des voies biliaires) *Bull et mêm Soc d chirurgiens de Par*, 1931, XLIII, 545

In 1924 the author reported eight cases of complications of biliary lithiasis—dilatation of the bile ducts, constriction of the lower part of the common duct, and constriction of the papilla of Vater—in which he made an anastomosis between the biliary and gastro intestinal tract. The immediate and late results in these cases were encouraging, but as an especially striking example of the advantages of the method he cites a case which he operated upon several months ago. The patient was a woman twenty-eight years of age who was suffering from gall stones with severe colic. For one week an attack

had persisted in spite of several injections of morphine and pantopon. As the patient was threatened with septic angiocholitis, operation was decided upon. In the separation of adhesions previous to removal of the gall bladder a choledochoduodenal fistula of recent formation was discovered. The fistula was filled with a necrotic substance which was easily removed. This substance was found to be the detached vesicular mucosa with its entire contents. There were no stones in the ducts. The operation was completed by reconstructing the choledochoduodenal fistula which had been accidentally resected. Excellent postoperative recovery followed. The patient remains in splendid condition to date.

The spontaneous fistula in this case permitted evacuation of the pathological contents of the biliary tract. Naunyn emphasized the necessity of such a spontaneous fistula for spontaneous recovery. As a rule, spontaneous recovery does not occur after spontaneous fistulæ forming between other parts of the biliary and digestive tracts, such as between the biliary tract and the colon. The author believes that the good result in his case was due to the reconstruction of the spontaneous fistula.

It is well known that constriction of the lower part of the common duct may cause serious trouble at operation. In the presence of such a constriction, choledochotomy with drainage of the hepatic duct will not give a lasting cure even though complete evacuation of pathological material is achieved.

As spontaneous fistulization gives good results, it would seem logical to conclude that an artificially produced fistula might give equally good results. However, the question arises whether an anastomosis between the biliary tract and the intestine might not favor the access of intestinal bacteria to the biliary tract. The author emphasizes the fact that the anastomosis is made to the duodenum which is relatively sterile and never to the lower parts of the small intestine or to the colon. Kehr recognized the value of this method and recommended anastomosis by suture rather than by the use of the Murphy button. He also emphasized the importance of making the anastomosis high enough up in the intestine or to the stomach. The disadvantages of the operation according to the older surgeons were postoperative dilatation of the ducts, hypertrophy of the walls of the biliary tract, and especially of the mucosa of the glands, an inflammatory hypertrophic condition of the lymphatic tissue in the walls, and the presence of bacteria in the biliary tract and even in the capillary bile ducts of the liver. However, Kehr attributed such infections to biliary stasis rather than to the anastomosis. Good results were obtained formerly only in cases of biliary lithiasis and not in cases in which obstruction was due to tumor. Cases successfully operated upon by this method have been reported by Anschuetz, Müller, Garre, Lameris, Doberauer, and Gohrbandt. Finsterer performed the operation in forty-eight cases, with only two fatalities, which he attributed to faulty technique. Postoperative drainage of the

summarized best by considering the processes which in general appear to affect the response of the animal to the alterations associated with pathological changes in the liver. One of the most striking observations is that the liver possesses a huge reserve, as evidenced by the extreme amount of liver that may be injured or removed without the production of symptoms referable to the liver. In addition to the fact that less than 20 per cent of normal liver is necessary, the liver is capable of more than 100 per cent replacement due to the restoration of tissue. In cirrhosis, all of the three factors which prevent restoration and repair of the liver in the experimental animal are present—more or less extensive cicatrization of the liver, reduction of the blood supply to the liver, and jaundice.

The development of collateral circulation in the experimental animal appears similar to that occurring in the human being.

Since a small amount of hepatic tissue is sufficient to maintain the normal metabolic and excretory functions of the liver, it does not appear surprising that most functional tests fail to indicate pathological changes of the liver until they are extensive.

Tests designed to evaluate the excretory function of the liver appear to be the most satisfactory of any hepatic tests the authors have used. Failure of this function is indicated by bilirubinæmia. This is not observed in the experimental animal without biliary obstruction unless extensive hepatic injury is present.

Ascites develops spontaneously in animals with very extensive cirrhosis, and also following obstructive jaundice of long duration.

In all of this experimental work the proportion of carbohydrate in the diet of animals with extensive hepatic lesions is of outstanding importance. In the entire absence of the liver, animals succumb to hypoglycæmia unless glucose is given. Bollman and Mann have maintained dogs with complete biliary obstruction for from six to twelve months on a diet of milk, bread, and syrup and have repeatedly observed the rapidly fatal effects of diets composed entirely of meat.

Four dogs were maintained on a diet of milk, bread, and syrup, four were given a mixed diet with a 25 per cent content of meat protein, a 50 per cent content of carbohydrate, and a 25 per cent content of fat, and four were given as much meat as they desired. All of these animals received daily doses of 10 c cm of carbon tetrachloride by mouth. At the end of one month, one of the animals that was fed meat had marked ascites and died two weeks later. Within three months the three others that were fed meat were distended with ascitic fluid and one of them died later. In the same period of three months the eight other dogs remained in good condition and showed no signs of ascites. Biopsy revealed that the livers of the animals to which meat had been given suffered more extensive injury than those of the other animals although lesions with the definite appearance of cirrhosis were present in all.

From these experimental studies of animals with definite pathological lesions of the liver, the authors draw the following conclusions:

- 1 Because of the extensive reserve and extensive reparative processes of the liver, symptoms of chronic hepatic disease appear as evidence that most of that organ has been destroyed and that the capacity for reparative processes is almost exhausted. However, in the experiments reported, removal of the agent responsible for the production of the hepatic lesions enabled the animal (and liver) to recover sufficiently to maintain fairly normal life.

- 2 A definite tendency toward intestinal hæmorrhage is present in animals with extensive injury of the liver, and this tendency improves as the condition of the liver is allowed to improve, although the distended varices of the collateral circulation remain.

- 3 Ascites in the experimental animal may be controlled by dietary measures.

- 4 Diets rich in carbohydrates appear to be essential for the maintenance of animals with extensive injury of the liver.

Bernhard, F. The Influence of Obstruction of the Common Duct on Liver Glycogen and Its Importance in the Etiology and Treatment of Diseases of the Liver Due to Biliary Obstruction (*Der Einfluss des Choledochusverschlusses auf das Leberglykogen und seine Bedeutung fuer die Entstehung und Behandlung der Lebererkrankungen bei dem Vorliegen einer Gallenstauung*) *Klin Wchnschr*, 1931, 11, 1761.

The author carried out experiments on animals to determine whether obstruction of the common duct is followed by glycogen deficiency and whether this in turn is followed by susceptibility of the liver to disease. In dogs, rabbits, guinea pigs, and rats in which he ligated or cut the common duct he found constantly a marked deficiency of glycogen in the liver. In the experiments on rabbits the common duct was ligated under urethane anaesthesia. After the operation the animals received only water and a daily subcutaneous injection of about 0.6 gm of phlorrhizin. By this treatment the blood sugar and the temperature were reduced. After a prodromal stage of several days, during which the animals exhibited general weakness, somnolence, and apathy, cramps developed. These phenomena, which are to be regarded as the manifestation of intoxication due to a deficiency of glycogen, ceased when injections of glucose were given. Therefore it may be assumed that a rich supply of glycogen protects the liver.

The symptoms of intoxication due to lack of glycogen were even more pronounced in dogs. They included weakness, coma, apathy, vomiting, drowsiness, a fall in the temperature, muscle twitching, cramps, and dilatation of the pupils, symptoms similar to those of postoperative liver intoxication.

Investigations were next carried out to determine whether, in prolonged obstruction, the liver loses its power to convert glucose into glycogen. In experi-

is too hopeless. In the latter case the removal of the fist-sized primary tumor mass together with the gall bladder and all contiguous tissues including a wedge shaped block of liver and all palpable lymph glands about the stump of the cystic duct resulted in uneventful healing and relief for a period of six months. At the end of that time the patient returned with pain in the region of the liver and a recurrence of the tumor. At relaparotomy, the tumor which was adherent to the hepatic flexure and the border of the liver was removed together with the terminal ileum, the ascending colon, one-third of the transverse colon, and about 5 cm. of the border of the liver and an ileotransversostomy was done. Recovery was again uneventful, and the patient left the hospital gaining daily in weight and strength.

JOHN W. BRENNAN, M.D.

MISCELLANEOUS

Billings, A. E., and Wakling, A. Penetrating Wounds of the Abdomen. *Ann Surg*, 1931, **xciv**, 1018

Billings and Wakling present a review of 220 cases of stab and gunshot wounds of the abdomen admitted to the Pennsylvania Hospital during the years from 1909 to 1930 inclusive.

In the 84 cases of stab wounds the total mortality was 25 per cent. Hemorrhage was severe in 7 cases, moderate in 11, and slight in 16. Shock was not marked except when it was associated with considerable hemorrhage. Of the 77 patients operated upon, 17 died. Four died from hemorrhage and shock. At autopsy, peritonitis was found in 11 cases, pneumonia in 3, and subphrenic abscess in 3.

In the 136 cases of gunshot wounds the total mortality was 55.14 per cent. Of the 75 deaths, 20 were those of patients who were not operated upon. Most of the latter were moribund when they entered the hospital. Of the 55 operative deaths, 28 occurred within the first twenty-four hours. In all of the fatal operative cases the hemorrhage was very severe. Autopsy was done in 49 cases. In 9, it revealed visceral injuries of one kind or another had been overlooked at the time of operation. The authors believe that these unrepaired injuries were important factors causing death, and that injuries are overlooked more commonly than is generally believed. As the 9 patients with overlooked injuries were in a very critical condition at the time of operation, it was necessary to perform the operation as quickly as possible. The authors believe that in such cases blood transfusion might improve the condition of the patient sufficiently to permit the surgeon to make a more thorough examination and a careful repair of all visceral injuries.

In conclusion the authors suggest a more general and routine use of blood transfusion, the adoption of measures to reduce further the incidence of peritonitis and wound infection, and thorough exploration of every case for visceral injury.

EARL GARSIDE, M.D.

Lucké, B. On the Morbid Anatomy of the Diaphragm. *Ann Int Med*, 1931, **v**, 750

The diaphragm is affected primarily by only a few diseases, but it is frequently involved secondarily by diseases of the pleura, pericardium, peritoneum, liver, gall bladder, stomach, spleen, adrenals, kidneys, pancreas, and duodenum. The author discusses the more common lesions—secondary neoplasms, tuberculous and acute inflammatory reactions, and certain degenerations.

Primary tumors are rare. The few that have been reported have all been of the connective tissue type. Secondary tumors are much more common. Of 164 cases of disease of the diaphragm reviewed by the author, a secondary tumor was found in 18. Fourteen of the secondary tumors were carcinomata, 3 were sarcomata, and 1 was a renal hypernephroma. The majority of the primary tumors were in the stomach, but some of them were found in the liver, gall bladder, ovary, lung, esophagus, and small intestine. In a series of cases reported by Kitain the sites of the primary tumor were the breast, uterus, bronchi, and tongue. Two of the primary sarcomata in the author's cases were in the mediastinum and one was a spindle-cell sarcoma of the thigh. In some of the cases of cancer it was difficult to determine whether the tumor had spread to the diaphragm by direct extension or by metastasis.

The cancers generally appeared as flat nodular infiltrations under one or both serous surfaces. Two of the sarcomata occurred as isolated rounded masses each of which was the size of a lemon. On microscopic examination the masses were seen to occupy the subserous lymphatics and to spread from there by way of the lymphatics throughout the muscle. The hypernephroma and the spindle-cell sarcoma probably spread through the blood stream. Large areas of the diaphragmatic muscle were seen to be replaced by the tumor cells.

Tuberculous lesions were noted in 35 cases. In nearly every instance they were secondary to adjacent primary foci. Even when the primary focus was in the chest, the peritoneal surface of the diaphragm was affected more often than the pleural surface. The gross appearance was the same as that of tuberculous lesions of other serous surfaces. In some cases isolated miliary and conglomerate tubercles were found, but in the majority there was a true tuberculous serositis. Adhesions were common. In many cases tubercles were formed in the diaphragmatic muscle, often with great destruction of the muscle fibers. As tuberculosis rarely involves the skeletal muscles, the frequency of involvement of the diaphragmatic muscle is probably due to the rich lymphatic supply of the diaphragm.

Diaphragmatic pleurisy and peritonitis have long been recognized, but the occurrence of a true diaphragmatic myositis has received little attention. Diaphragmitis was found in 25 of the author's cases. Some of them showed degenerative lesions, but the majority presented a true myositis. The degenerated muscle fibers were separated by edematous fluid.

contains polymorph clear leucocytes and occasional mononuclear histiocytes. A delicate fibrin net was often seen. The capillaries were engorged and the lymphatic distended. In 15 cases the pleural membranes were pneumonic. Repairs were sutured to the serous surface and fibrotic patches in the muscle.

The most common of the degenerative changes occurring in the diaphragm is alveolar degeneration characterized by Zenker hyaline degeneration and fatty degeneration.

The vascular degeneration is seen most often in cases of diaphragmatic hernia. The muscle cells are often indurated without structural details, do not irregularly hypodense vacuoles.

Cloudy swelling is best recognized fresh from sections or teased preparation. The cells are large, the striations are hazy, and the cytoplasm is lumpy granular.

Zenker's hyaline degeneration has been described in detail by Wells who emphasized the frequency and

importance of this type of lesion as a complication of pneumonia.

Myocardial changes are fatty degeneration and fatty infiltration. The former is characterized by replaceable fat deposits within the muscle cells and considered by many to be irreversible degeneration. It is found most often in the coronary ducts and in the fatty degeneration of the heart. The diaphragm shows this lesion most often in the skeletal muscles.

Fatty infiltration takes place only when associated with atrophy of the muscle fibers. When the muscle fibers have become atrophied the fat penetrates between them and interrupts their continuity.

A young child's diaphragm has a coronary vascular system and the efficiency of the muscular pump in the contractility of its components and function.

E. S. PLATT, M.D.

GYNECOLOGY

UTERUS

Gyllensvärd, N Metrorrhagia Hæmorrhagica Juvenilis (Ueber Metropathia hæmorrhagica juvenilis) *Acta obst et gynec Scand*, 1931, xi, 423

This article emphasizes the importance of distinguishing between acyclic and cyclic juvenile hæmorrhages

The author reports a study of the onset, course, and prognosis of cases of the acyclic hæmorrhage called by Schroeder "metropathia hæmorrhagica juvenilis"

The average age of the menarche was found to be somewhat lower in the cases of women with these acyclic hæmorrhages than in the cases of normal women The first pathological hæmorrhage occurred in immediate relationship to the menarche in only a small number of the cases reviewed In the majority, there were several years of normal menstruation between the menarche and the appearance of the hæmorrhage

The author therefore believes it is incorrect to designate these hæmorrhages as "hæmorrhages of puberty"

As the hypophysis is of importance in the function of the ovaries, particularly in the development of the ovarian follicles, and as both the hypophysis and the ovary are rather intimately related to the thyroid gland, the author undertook studies to determine whether a disturbance of thyroid function might not be the cause of metrorrhagia hæmorrhagica juvenilis He reports the results of these studies after reviewing earlier investigations regarding the relation of uterine hæmorrhages to the thyroid gland and discussing methods of examination

He concludes that while it is probable that a disturbance of thyroid function is present in a few cases, such a disturbance cannot be demonstrated, at least not by our present methods, in a sufficiently large number of cases to justify the assumption that it is the cause of the hæmorrhages

In re examinations which he made of the majority of his patients after from one to nine years, the author found that the results of various types of treatment were apparently good for the first few months, and that, irrespective of the kind of treatment, most of the relapses occurred during the second half year He therefore concludes that at least a year must elapse before the results of a method of treatment can be estimated

Sistomensin, which is said to be a good remedy for "hæmorrhage in puberty," is worthless in metropathia hæmorrhagica juvenilis This is not surprising as its purpose is to check abnormally severe bleeding in menstruation

ADNEXAL AND PERIUTERINE CONDITIONS

Smith, P E, and White, W E The Effect of Hypophysectomy on Ovulation and Corpus Luteum Formation in the Rabbit *J Am W Ass*, 1931, xcvi, 1861

That the secretion of the anterior pituitary is essential to gonadal function seems to be one of the most firmly established facts in the physiology of the reproductive system With the ablation of the anterior pituitary, follicles cease to develop and those with cavity formation undergo atresia

Recent work reported by Fee and Parkes has shown that the pituitary sex hormone (or hormones) is secreted into the body fluids with almost amazing rapidity These investigators found that the pituitary, which had been secreting at a rate only sufficient to bring about a development of the follicles to the condition obtained in the non-mated oestrous rabbit, was stimulated by copulation to secrete within the period of one hour sufficient gonad-stimulating hormone to bring about the maturation of the follicles The development of the corpora although somewhat slowed, was nevertheless normal in character for a period of thirty-six hours after the copulation

In experiments carried out by the authors on ten rabbits the anterior and posterior pituitary were completely removed by an oral approach through the soft palate from one and a quarter to seventeen hours after the animals had been mated Examination of the ovaries revealed that ovulation occurred in every case Since follicular growth and maturation will not take place in the absence of the pituitary gonad-stimulating hormone, it is evident that the stimulus afforded by copulation caused, by some at present unknown mechanism, an immediate and considerable discharge of this hormone

The authors found also that corpus-luteum formation occurred even in the rabbits in which the pituitary was removed a short time after mating and consequently several hours before ovulation had taken place In such animals the corpora appeared to be normal twenty-four hours after the hypophysectomy In ovaries removed at the end of the second day after the hypophysectomy the corpora showed no striking developmental failure, but in ovaries removed four days after the hypophysectomy it was evident that little growth beyond that of the second day had taken place, and in those removed eight days after the hypophysectomy the corpora had regressed

In order to see the effect on the completely formed corpora, a twenty-two-day pregnant rabbit was hypophysectomized, one ovary was removed four days later, and the other ovary was removed eight

day later. This animal bled some of the tissues on the third day after birth. When laparotomy was performed on the fourth day, three dead fetuses were found in the uterus. The corpora which have been shown to be essential for gestation in experimentally normal animals showed a vascularity and growth.

The finding that corpora lutea will develop for a period in excess of two days, the absence of post-ovulatory stimulation of the hypophysis was unexpected, but seems to have some relation to the problem as to whether the exogenous hormone is secreted by the uterus or hypophysis. In simulating follicular growth with other stimuli, glutathione. It is evident that if the granulosa is acted upon by two hormones, one causes growth of the granulosa and the other luteinization. Both must be present at the same time and neither must be a selective luteinization of the granulosa by the granulosa before a day after follicular rupture.

THE DORE J. M. RIS M.D.

Siegert F. The Result in Women of Transplantation of the Ovary. Submitted by Administration of the H. M. N. (Egbert D. O. N. Tra. Pl. to be M. H. T. G. H. T. G. F. G. K. G. K. U. H. M. F. H.) Z. I. Bl. f. Gy. K. 931 p. 684.

The author reports the result of transplantation of the ovary in thirty-seven women. The child-bearing capacity was restored because of inflammation of the uterus. Tissue from the patient's own ovary was implanted in the healthy ectopic muscle in a so-called autoplasmic transplantation operation. The results must be judged on the basis of the etiology of the menstrual disturbance. Abence of disappearance of the symptoms of cessation of ovarian function.

Permanent return of regular menstruation occurred in 40.5 percent of the women, transient return of menstruation in 35 percent, metrorrhagia in 21 percent, amenorrhea in 35 percent. The treatment was successful in 50 percent of the cases. While the severity of the menstrual symptoms usually depended on the frequency of regular menstruation, the results were not affected after the patient's large number of patients to whom menstruation did not return, and free from menstrual disturbance.

The author reports also his experience with transplantations of the ovary in cases of ovarian dysfunction. In these cases the transplantation was successful in 100 percent of the cases. The treatment was purely functional, the endocrine balance by transplantation was slightly disturbed for the most part merely temporarily. In one half of the cases in which because of rapid absorption of the transplanted tissue or of its inactivity the transplantations were and menopausal symptoms remained appeared good results were obtained by supplementing the insufficiency of the transplantation.

tion by the administration of ovarian hormone. The better prospects of hormonal therapy become a result of improvement in hormonal preparation, the more success can be expected from this such therapy as supplementary ovarian transplantation. See text (C).

Greenhill J. P. Rupture of a Corpus Luteum with Intestinal Hemorrhage. A Report of Two Cases. *Am. J. Obst. & Gynec.* 93, 90.

Rupture of a corpus luteum, the intra-abdominal hemorrhage is more frequent than is deduced from the number of cases reported in the literature. There is nothing characteristic in the history or the findings of physical examination at the correct period of operation, diagnosis is rarely possible. The foretelling of the condition should be rare. Menstrual ovarian pressure does not favor abdominal hemorrhage.

The histological disposition of the same thrombospore for non-perforated hemorrhages in the ovary, amely, and the high frequency of hemorrhage in the ovary and engorgement of the vessels. A further question, the trauma plays a role in one of the uterine structures, the rupture was produced during bimanual examination.

E. L. CORTELL, M.D.

Al-Nif A. O. Intestinal Hemorrhage with Symptom of Appendicitis (Obliterated Appendix). *Z. k. f. Leger* 193, 7.

Laparotomy in abdominal diseases with intestinal symptoms, however, shows that the lesions are the source of hemorrhages in the abdominal cavity more frequently than has been thought. In most of the cases, as evidenced by the author's diagnosis, the development of peritonitis, oneous lesions with severe hemorrhage, rupture of the intestine, terioperitonitis, a diagnosis was made with light hemorrhage, appendicitis, rupture of the gallbladder. Encapsulated hemorrhages have been taken for one is torsion of the intestines. In the course of the year at the Hospice of the Hospital, the cases of pathologic hemorrhage from the ovary were found to operate on all of the hemorrhages noted. Symptomatically, the hemorrhages are preducing.

Ovarian hemorrhages can arise from (1) normal follicle development, (2) a menstruation, but rarely from a corpus luteum, (3) a follicular cysts, especially corpus luteum cysts, (4) a hamatoma of the ovary, (5) a hemorrhage arising from the follicular rupture, (6) a blood clot, (7) ovarian pregnancy, (8) a lymphoma, (9) a Forster's as the source of hemorrhage, (10) a hemorrhage, (11) a benign or malignant ovarian tumors.

The author gives the cases of intestinal hemorrhage from the ovary. In the case of the hemorrhage was caused by the ovarian rupture of a follicle, the cases by miscarriage, partially demonstrated corpus luteum, with intestinal hemorrhage.

and in six cases by rupture of follicular cysts. On four occasions the hæmorrhage occurred fourteen or fifteen days after the menses, on four occasions, a few days before the appearance of the menses, and twice, one day after the menses.

The symptoms of ovarian hæmorrhage are not characteristic enough to constitute a distinct syndrome. The pains usually begin suddenly and violently and diminish in intensity rather quickly. Very frequently the temperature is somewhat elevated. Bimanual examination as a rule yields nothing on which to base a diagnosis of ovarian hæmorrhage.

If hæmorrhage from the ovary is found at laparotomy, the treatment indicated is partial resection of the affected ovary or, in small cyst degeneration, cauterization of the bleeding ruptured follicle and ignipuncture of the remaining, enlarged follicular cysts.

SAENGER (G)

Ando, S., and Narimatsu, K. Lymphatic Vessels in Ovarian Tumor. *Jap J Obst & Gynec* 1931, xiv, 380.

By employing the injection method, the authors found numerous large plexuses of lymphatic vessels enclosing ovarian cysts and carcinomata. In the ovarian cysts the lymphatic vessels paralleled the increase in the number of blood vessels, but in the ovarian cancers they had no numerical relation to the blood vessels. The lymphatics of the malignant growth may be distended by the pressure of the contained cancer cells.

In both ovarian cysts and ovarian cancers the lymphatic vessels are found only in the connective tissue.

LEOPOLD GOLDSTEIN, M D

Rabau, E., and Lewinski, H. The Clinical Aspects, Differential Diagnosis, and Genesis of Ovarian Hæmatomata (Zur Klinik, Differential-diagnose und Genese der Ovarialhæmatome). *Deutsche med Wchnschr*, 1931, ii, 1575.

Cases of severe, profuse intra-abdominal ovarian hæmorrhages usually come to operation with the diagnosis of ectopic pregnancy. In the absence of acute symptoms of hæmorrhage and the presence of symptoms of peritoneal irritation, appendicitis may readily be simulated. However, the menstrual anomaly (amenorrhœa from corpus luteum cysts and subsequent hæmorrhage) should suggest the proper diagnosis. Vaginal examination usually reveals an enlargement or a pronounced sensitiveness of the affected adnexa. However, the normal or only slightly increased rate of sedimentation of the red blood cells is of as little value in differentiating between tubal pregnancy and ovarian hæmorrhage as a positive puncture of the cul-de-sac of Douglas. Even at laparotomy a few cubic centimeters of blood are occasionally found in the abdominal cavity in the absence of noteworthy pathological changes in the tubes or ovaries. The authors report a case in which, at laparotomy performed for suspected ectopic pregnancy, a ruptured lutein cyst of the left ovary was

found to be the source of the slight bleeding. Otherwise the genital organs were normal.

The genesis of the severe and frequently life-endangering bleedings from the ovary are still unexplained. Even when the tubes appear normal, proof of a tubal pregnancy can be ruled out positively only by microscopic examination. The possibility of such hæmorrhages from the ovary is evidenced by another case reported by the authors—that of a twenty-three-year-old woman with irregular menstrual periods but without external hæmorrhage who was suddenly seized with severe pains throughout the abdomen and attacks of syncope. To the right of the uterus a sensitive tumor the size of a hen's egg was palpable. At operation, about 1,000 c cm of mostly fluid blood, numerous adhesions, and bilateral hydrosalpinx were found. The source of the bleeding was a rupture about 4 cm long in the left ovary which was the size of a hen's egg.

Microscopic examination disclosed no evidence of pregnancy. The ovary showed multiple follicular cysts. Therefore in this case both the clinical and the histological findings indicated that, as suggested by Cohn, the hæmorrhage came from the vessels at the site of rupture or in the interior of the follicle. The authors are unable to offer any explanation for the left-sided localization of the bleeding in this case and the cases reported in the literature. Nevertheless they believe that their case proves the occurrence of severe bleedings as a result of the rupture of a follicular or lutein cyst in the absence of pregnancy.

STRAKOSCH (G)

Tédénat. Embryomata of the Ovary (Embryomes de l'ovaire). *Gynécologie*, 1931, xxx, 578.

Tédénat says that as the so-called "dermoid cysts" of the ovary contain elements derived from all 3 germ layers, they are more properly called "embryomata" or "teratomata."

The degree of differentiation of the germ layers is subject to variations ranging from the development of isolated tissues and members (teeth, hair, thyroid, bone, etc.) to the formation of well-defined homunculi.

Embryomata have been found at all ages and occur during fetal life as well as in old age. Estimates of their frequency range from 2.2 per cent (Spencer-Wells) to 18 per cent (Sanger and Kelly). This difference is due to the fact that minute teratomata may be overlooked unless the ovarian cyst is carefully studied. Of 600 ovarian cysts operated upon by the author, 82 were embryomata. Tédénat believes that 10 per cent of ovarian cysts are cystic teratomata and 2 per cent are solid teratomata, and that the latter are nearly always malignant.

Ovarian cysts are usually round or ovoid and occasionally are lobulated. Their surfaces are smooth and glistening, yellow, and often covered with fine red adhesions. They usually range in size from that of an egg to that of a fist. Occasionally they have weighed as much as 30 kgm. The embryoma-

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Of the patients who were treated with radium alone or with radium and the roentgen rays alone, the average length of life of those who died with early lesions was two years, ten months, and fifteen days, and the average length of life of those who died with advanced lesions was two years and eight months. Of the patients treated by both surgery and radium irradiation, in all of whom the condition was in an early stage, the average length of life was one year. The living patients of this group showed evidence of malignant activity within one year.

Broders' series of 18 cases seen in the Clinic between 1904 and 1915 were either inoperable or were treated by operation only. Of the 12 patients who were operated on, 2 (16.6 per cent) were alive after nine years and five months and after fourteen years and seven months respectively.

It may therefore be said that the palliative effect of radiotherapy compared with the results in cases in which no treatment is administered results in an average prolongation of life amounting to one year and nine months in the early group and one year and seven months in the advanced group. Arrest or cure was obtained in 6 of 12 early cases treated by radiotherapy as compared with 2 of 12 cases treated by operation alone.

Of 53 patients (37 of the combined series of 41 and 16 of Broders' series) who had been traced when this article was written, only 9 have survived without evidence of recurrence for from two to twelve years. A so-called cure was therefore obtained in only 17 per cent. This deplorably low figure indicated not only the high degree of malignancy of the lesions but also the failure in large measure of both early diagnosis and present methods of dealing with the disease.

MISCELLANEOUS

Hartman, C. G. The Phylogeny of Menstruation
J Am W Ass, 1931, xcvi, 1863

While it is conceded by biologists that in its spectacular manifestations menstruation is a primate character," the author calls attention to the universality of uterine bleeding in vertebrates.

In the monkey there are many types of uterine bleeding of regular or frequent occurrence: (1) menstruation with ovulation, (2) menstruation without ovulation, (3) the placental sign or bleeding of implantation, and (4) the intermenstrual or mittelschmerz bleeding.

Hartman believes that menstruation and placental bleeding are conditioned by the same physiological factors. Throughout the vertebrate series, wherever the embryo lives in a brood chamber at the expense of the parent beyond the point to which the stored yolk of egg carries it, bleeding occurs into the brood chamber. This is true of man and of monkey, the menstruating forms that have a particularly hemorrhagic type of implantation, of the forms having a burrowing type of placenta, such as lemurs,

carnivora, and rodents, and of non-deciduates, such as the sheep and the cow.

Passing to the predominantly egg-laying classes of vertebrates (fish, amphibia, reptiles, and birds), one finds that in all except the birds here and there, in species, genera, or even whole families, life habits have become associated with viviparity, intra-uterine or intra-ovarian development, even to the extent of yolk sac or allantoic implantation. Here also it is found that when the embryo depends for development beyond the egg stage on the mother's (or the father's) body substance, the brood chamber contains red blood cells mingled with the pabulum provided by the nutritional organ.

With few exceptions the nutritive organs are the derivatives of the muellerian ducts. This is practically the only mucous membrane in the body through which the passage of red blood cells is a physiological process.

From among the great variety of conditions under which embryonic nutrition is effected in the various truly viviparous fish and amphibia, the author selects as examples those found in the salamandra atra, the stingray, pteroplatea, and the zoaraces.

In conclusion he says that the study of the control of the bleeding has not yet begun so far as the lower vertebrates are concerned. The suggestion of Hartman, Firor, and Gelling that a hypophyseal factor may be generally involved he believes is worthy of investigation.

THEODORE J. MORRIS, M.D.

Frank, R. T. The Role of the Female Sex Hormone
J Am W Ass, 1931, xcvi, 1852

Frank states that in analyzing the processes of the sex physiology in the female it is necessary to consider the follicle, the corpus luteum, the placenta, and at least two fractions from the pituitary.

The hormone of the anterior lobe of the pituitary gland stimulates the ovary to produce follicles. The follicle elaborates the female sex hormone. Following ovulation, the corpus luteum develops. This gland continues to produce the female sex hormone and a special hormone. The chorion epithelium, later developing into the placenta, produces both female sex hormone and prepituitary hormone.

The clinical conditions discussed by Frank are limited to those occurring in adolescents and mature women with functional disturbances.

Of the primary functional diseases of the female, hyperfunctional conditions have proved most difficult to analyze. Hypofunctional conditions are classified as amenorrhoea, oligomenorrhoea, and sterility.

Frank describes the tests he uses for the female sex hormone and the prepituitary hormone in the blood and the urine.

The work on the prepituitary hormone has not yet advanced sufficiently for the determination of an absolute norm.

The manifestations of ovarian hyperfunction are divided into puberty bleeding, preclimacteric bleeding, premenstrual hypertension, and maturity men-

o rhagia nd metrorrhagia In cases of puberty bleeding the level of female ex h rm ne in the blood appea s t be constantly high The u ne e c etion also demon trates marked o erp ductio of the h rmone Also n ca s fclimactenic bleeding f pu ly functional cha acte th l el of the hor m ne in the blood is high A rule h we er st h ws some cyclic ariso In ca e l p men st u lyperte nth ma ked nerv us and ascula sympt ms p eced ng m n tru ton re xpl d by rproduct on r unde etc ti n of the hormone The matu ity meno rhagia and metrorrhagia ha e not been el c dat d by th auth rs stud es

The man f stat ns of o arian underfu ct n a d v d by the uth int ameno rhoea nd st nity The f mer s bdi ded into () the subth eshold bl od cycle h h s cha terized by an a cumula t on of horm n in th blood at m or less egular intervals and a typical u ne c rie w th i c e se f exc et n at the t me of f licle r pen ng r ovula t n (2) the neg t blood cycl n whi h th bl od fal t show an acc mulat on f h m b t n xces of ho mone s found in the u ne d (3) cycl c me o rhoea n wh h n th r the bl od nor the urin h ows dem n tr ble quant ties of female sex ho m n

Ca es of st nity sh e th a subth sh ld bl d cycl o a ng ti blood c nd t rth a u ina y cycle

On the ba s of h s find gs Fr nk c nclude that p e e t methods f t eatment a e il g cal H s i est gat ns ith all f the uppo edly p nt nt n r l be p eparation comme ally bt ble ha e p o ed negat e H tud s of p b ty menorrh gia or metr r hagia ha e c n ced him that these o d t ns a e u ually f l m it d H the fore places th p t e t n the best su nd ngs av lable and t eat h r w th est rob rant d t f sh r and s ight t f frequently ur tage s requ red t el e th bl d ng t mpo arly Re pe ted transf ns m y be e ssary Th s of parathy id uln th elin a d la g doses f cal um h s pro ed a a l g

The bleedings f m tu ty h e also failed to respond to endo ine the apy b t for these the ord rary meth d available to th gynec log t h a cu ettage nd o ngen the apy m y be u d w th less h s tati n as the maj ty f th patent h al dy borne umer u chld n

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A number f ca f m n h oca ha e be f d due to o arian d sturba o ly co d rily I such cases the unde ly g e d t n wh n am ble t t eatment has been attack d Th utho ha been unable t inf c am n h oca result g

fr m marked o ari n und acti itv I mo c cases he has ad sed against the so-call d st mulati g dose f \ rays

In certa n case f sterility sex hyge e d tary contr l and reassuranc f the pat t e s s ffective as ny the apv yet d sed

In cases of cl mact e c sympt m th to gh l m in to nd in se e e c ses occas o al n section and the dm st t on f c l c m s high d sage have pro ed as effecti as fem l se horm e th apy

ALBE r M V LM x MD

C nd l N The Uterine nd Ovari Cy l l th Gula a Pig F l l w l g th Admi f trati f the Apl Drugs (l l t d l c l t c o ll gu l l mm tra d d gh p l b) Rev u l d g 93 533

In e e of e pecrim nts n wh h be st d d vagn l sm a s d h tolog c l secti n of the genital t a t of g nea pgs Candel dem strated th t the suppos d emmenagogic ct on f apol a deri at v f pars l y (pet o elium s tivum) wh h u omm nly u d cl scally in the tre tment f hypo f net o f th v nes and to p duce ab t i d to v l nt nge to of the g n t l tr ct H w s u able t demo strate ny spe f eff t th o ari se ept co g to o poss bly an nhb f th de el pment of th l l l due to th to e p ope t n of the drug Whil pol m y ca e ab t n wh n t i tak n in la ge doses these does r follo e l by to ic ymptoms and often by death The a thor ad is that the cl n cal u of th drug be d contin ed

PER A Ros MD

M n l L T b l M lity d th Direct Action Ex rted pon It by th follicula Fl d d E tract f Corpu l ut um (La m t i a t b l l e d t h s d s t l l d l l l e test it d rpo l tes) f d d l l g 93 f 59

Man i t d e d n m th effect of foli cul d d a d c r p s luteum extract n the motility f f llo pa t bes h h had been sed t pe at o f r e pl sm o infl mmatory d s a e f the pel v c rgan o d r g exa n ct on

The f llicula su d stim l ted th k i et acti ty f th tube prod c i high c ntr ct n a d r g u lat ng the h ythm of th m t lity The tract of corpus l seum lm st stopped the tubal act i

Th se results s port th theory th t the m t lity f th f llopan t bes s c ased d n g the f llicu lar phase th t s during r turatio a d pecial rupt re of th f llicle to fa r the m gr t f h o um tow d th ter c lity a d th at d ng th c rpu l t m ph se it s de e sed to fa o impl n t t n of th ovum

Th a th e t f also th t th m t r act ty of the t bes exced duri g p egn nc wa d m lsh ed whereas that f tubes cased d ng labo was l cr ed I both of these periods th t bes re pond d a m lly to th t be f no pregn t w m n

PER A Ros MD

Schereschewsky, J. Operative Treatment of Urinary Incontinence in Women (Beitrag zur operativen Behandlung der Harninkontinenz beim Weibe) *Ztschr f urol Chir*, 1931, xxxii, 157

The author discusses the topography of the organs of the small pelvis, especially of the base of the bladder and the urethra, and the influence of a change in position of these organs on their function. He then describes Figurnow's operation for urinary incontinence.

In addition to the suturing together of the separated fibers of the sphincter and removing the cystocele, the position of the floor of the bladder and of the urethra is corrected by fastening the anterior vaginal wall to the posterior surface of the pubic bone. In a vertical direction from above downward and with the aid of a small, sharply curved needle, two silk ligatures, one on each side of the symphysis, are passed through the beginning of the arcus tendineus fasciæ pelvis, which can be felt as a roll on the posterior surface of the pubic bone and extends in a horizontal direction. The ends of the ligatures are brought through the anterior vaginal wall in its middle third in a vertical direction, one to the left and one to the right of the neck and floor of the bladder, and tied. By this means the vaginal wall is raised and approximated to the posterior surface of the pubic bone. The floor of the bladder is thus elevated and brought up toward the pubic symphysis, the posterior wall of the base of the bladder is pressed against the anterior wall, and closure of the vesical sphincter is made easier. The urethra

assumes its normal position, and is lengthened and extended. Sixty-three patients have been treated by this method since 1922. Primary healing occurred in all.

The late results in the fifty-six cases which have been followed up are complete cure in thirty-nine, improvement in twelve, and no change in five. For cases of urinary incontinence from birth which is not complicated by injury of the vesicovaginal wall or by adhesions, the author considers Figurnow's procedure the method of choice as it is simple, it has a sufficient anatomical and physiological basis, and it has given good results.

The Goebell-Stoeckel operation also depends on puckering of the sphincter, correction of the cystocele, and elevation and fixation of the bladder and urethra, but is more difficult technically. It is indicated in difficult cases of urinary incontinence with extensive cicatricial changes in the neck of the bladder, cases in which it is necessary not only to restore the sphincter but also to provide it with a support from beneath by building up a cushion of fascia and muscle. In uncomplicated cases the latter operation is needlessly severe. Therefore in such cases Stoeckel employs the so-called direct musculo-plasty. However, as compared with direct musculo-plasty, Figurnow's operation possesses the advantage of assuring a reliable elevation of the fundus of the bladder and fixation to the posterior surface of the pubic bone by means of ligatures which are passed through the arcus tendineus fasciæ pelvis.

F. T. MEYER (G)

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

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Th t e c e f d f i t l m p i a t n
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only a symptom. Seitz was the first to suggest a "disturbance in the chemical and physicochemical equilibrium of the cells and blood" as the cause. In this disturbance the ions play an important role.

The author discusses the importance of the acid-base equilibrium in the eclampsia problem and the bases of this conception. He calls attention to the fact that in eclampsia the buffer capacity of the blood against acid valences, which is already reduced in normal pregnancy, suffers a further and not inconsiderable reduction. He believes that the cause of the decrease in normal pregnancy is a primary reduction in the alkali reserve, perhaps of central origin. He has previously suggested that the blood acidosis in eclampsia may be due, not to the entrance into the blood of excessive quantities of the acid products of metabolism, but to a disturbance in the ratio of chlorine to sodium in favor of the former, the blood acidosis therefore representing a true alkali deficiency. If this theory is correct, the important factor producing the eclamptic state is a tissue alkalosis resulting from the fixation of sodium in the tissues. These theories find considerable confirmation in the findings reported in this article.

Rossenbeck first made studies of the blood serum. The material and method are discussed. In normal pregnant women the chlorine values were constantly higher than in non-pregnant women, but the sodium values were lower. The potassium values were practically within the limits of normal. The same may be said of the calcium values, which were only slightly increased. The average value for magnesium showed a slight decrease. The author points out that, not the milligram percent figures, but the milligram equivalents are of importance in the biological equilibrium of the ions in relation to one another, a fact which is often overlooked even in the most recent literature. Calculations made on this basis show that no great importance in the regulation of the acid base equilibrium is to be attached to potassium, calcium, or magnesium. On the other hand, changes in the equilibrium between sodium and chlorine probably play a decisive part in the decrease in the capacity of the serum to bind carbon dioxide in normal pregnancy. Also in cases of nephropathy and eclampsia, the changes in the potassium, calcium, and magnesium ions are of no practical importance. In nephropathies the chlorine shows a distinct tendency toward still higher values and the sodium a tendency toward still lower values than in normal pregnant women. In eclampsia there is a shifting in the same direction which is considerably more marked.

Examination of organs is a much more difficult matter because of the rarity of material and the lack of proved normal figures for comparison. Rossenbeck made such examinations in two cases, that of a woman with epilepsy who was normal so far as her pregnancy was concerned, and that of a woman with severe eclampsia. He compares the findings with normal values in a number of tables and a

curve. The chlorine in the musculature showed a distinct increase in the following order: non-pregnant state, late pregnancy, eclampsia. This change was much more marked in the case of sodium, which underwent a really enormous increase in eclampsia. Potassium behaved in the opposite manner. Calcium, which was less in late pregnancy than in the non-pregnant state, was found greatly increased in the musculature of the eclamptic woman. The changes in the potassium calcium ratio paralleled the increase in neuromuscular excitability in normal pregnancy and its decrease in eclampsia. In the author's opinion, the behavior of the sodium potassium ratios is related to growth and oxidation processes. In the liver there was an increase in sodium, potassium, and calcium in late pregnancy, a relative decrease of the sodium content in eclampsia, and a shifting of the potassium calcium ratio in favor of the potassium. In the lung, there was a decrease of the sodium content in late pregnancy and in eclampsia, whereas in the kidney there was an increase in the sodium.

In a brief abstract it is impossible to go into the theories which the author has formulated on the basis of his findings. These must be read in the original.

H. SIEDENTOPF (G)

García Amo, P. Appendicitis in Pregnancy (*Appendicitis en el embarazo*). *Arch. de med. cirug. y especial*, 1931, XI, 1021.

The association of appendicitis and pregnancy is rare. A collection of obstetrical statistics shows that it occurred in 04 of 215,854 pregnancies, or once in 2,300 pregnancies and a collection of surgical statistics, that it occurred in 501 of 36,140 cases of appendicitis or once in 72 cases of appendicitis.

On the author's service, 2 cases of appendicitis in pregnancy have been operated on within a year. In both, the appendicitis developed in the fifth month of the pregnancy. The first case was that of a woman twenty-three years old who was admitted to the hospital suffering from pain in the right iliac fossa and vomiting. Appendectomy was performed and the wound closed without drainage. Six days after the operation the patient had a chill and a high fever. On the ninth day the fetus was expelled spontaneously and the placenta was removed with forceps. On the twenty-sixth day the patient was discharged well.

The second case was that of a woman who had suffered from nausea, vomiting, and pain in the right iliac fossa for three days before her admission to the hospital. Examination revealed rigidity of the lower two-thirds of the right half of the abdomen. The pain was most severe at McBurney's point. At operation, the appendix was found perforated. Appendectomy was followed by copious suppuration of the wound. On the twenty-eighth day abortion occurred, and two days later the patient died.

The appendix is usually so displaced by the pregnant uterus that the maximum pain is rarely at

McBurney's point. Vaginitis occurs not only about half of the cases. Muscle rigidity is difficult to demonstrate and is less frequent than in the absence of pregnancy. The case may be contraction of the uterus. Recognition of this fact is important for a diagnosis of the condition with premature detachment of the placenta.

The author discusses the literature on the treatment of acute appendicitis in pregnancy and concludes that operation should be performed in all cases when the attack is mild or severe and regardless of the length of time that has elapsed since its beginning. If possible the wound should be closed without drainage. The pregnancy should not be interrupted unless abortion or delivery has already begun. A. D. V. G. W. M. D.

LABOR AND ITS COMPLICATIONS

D. W. M. E. and M. G. W. B. Abrupt Placenta. S. G. G. & O. B. 1931. 768.

The results of a study of 164 cases of abruptio placentae occurring in 4,000 normal deliveries during the fifteen years at the Chicago Lying-in Hospital. In 11 of the 64 cases the separation of the placenta was partial and in 53 it was complete. Partial separation occurred in 35.7% of the cases, complete separation in 28.7%. The incidence of placental separation was 1.6% per cent. It is generally believed that multiparity, prolonged pregnancy, and 36.6% per cent of the patients who have experienced a previous abortion in the same pregnancy are factors in the etiology of this condition.

In the present series, 96 of the 164 cases were fatal. The maternal mortality rate was 1.6% per cent. The fetal mortality rate was 55.5% per cent. The authors believe that the most important factor in the etiology of placental separation is the presence of a previous abortion. The authors also believe that the presence of a previous abortion is a factor in the etiology of placental separation. The authors also believe that the presence of a previous abortion is a factor in the etiology of placental separation.

Partial abruptio placentae may be diagnosed by the presence of a hazy area in the placenta. The authors also believe that the presence of a previous abortion is a factor in the etiology of placental separation. The authors also believe that the presence of a previous abortion is a factor in the etiology of placental separation.

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The most important factor in the prognosis is probably the time at which the condition is diagnosed and treated. In this case, the authors found that the mortality was 75% per cent. The prognosis is most unfavorable for the child than for the mother. In cases of complete abruptio placentae, the baby is dead and in case of partial placental separation, the mother and the baby are sacrificed in the event of a stillbirth. In the cases reviewed, the mortality was 60% per cent.

C. H. D. M. D.

Hoe n H. d. Rigidity of the P. t. l. gl. all. Complicating Delivery (D. Starr d. P. r. u. g. n. a. l. Geb. i. k. m. p. l. k. t.) Z. k. r. f. Geb. i. k. G. k. 93. J.

Every first stage of labor which lasts longer than 12 hours is attributed by the author to the case in which the severe rigidity of the cervix with long delivery delays the delivery of the mother. A high incidence of stillbirths is observed in labor of 12 hours or more. The number of stillbirths is increased to 10% of every case. The author recommends digital dilatation of the cervix in cases of severe rigidity. If the mother is in labor, the number is increased to 10% of every case. The author recommends digital dilatation of the cervix in cases of severe rigidity. If the mother is in labor, the number is increased to 10% of every case.

St. C. y. J. E. Failed F. p. B. I. M. J. 93. 73.

Stacy W. R. I. 54 cases in which an attempt to deliver as much as possible with forceps failed. The author believes that the most important factor in the etiology of placental separation is the presence of a previous abortion.

In 5 of the cases the membranes ruptured early and 88% (77 per cent) of the cases ruptured. The author believes that the most important factor in the etiology of placental separation is the presence of a previous abortion.

In 100 cases (66 per cent) the cervix was dilated to 10 cm. The author believes that the most important factor in the etiology of placental separation is the presence of a previous abortion. The author also believes that the presence of a previous abortion is a factor in the etiology of placental separation.

Of the 46 cases of contracted pelvis, the pelvic contraction was the sole cause of non-delivery in only 21

Occiput-posterior position occurred in 48 cases (31 per cent) and in most of them had been unrecognized. In 16 cases it was the sole cause of the failure of delivery. Stacey says that the most common obstetrical condition for which he is called in consultation is labor complicated by occiput-posterior position.

Other conditions responsible for difficulty of delivery in the cases reviewed were face and brow presentations in 11 cases, breech presentation in 3, transverse presentation in 4, an obstructing tumor in 2, and abnormalities of the child such as large size (weighing over 12 lb) and hydrocephalus, in 4.

In 33 cases (20 per cent) spontaneous delivery occurred after the cervix had dilated or an occiput-posterior position had rotated forward. Stacey believes that the incidence of spontaneous labor would have been higher if attempts at delivery had not been made prematurely in many of the cases.

In 64 cases (42 per cent) forceps were used. Among these were 25 cases in which manual rotation of a posterior into an anterior vertex was tried first. In many cases the forceps had been applied more than once before the patient entered the hospital, and frequently more than 1 attempt was made before delivery was brought about after her admission.

In 38 cases (25 per cent) delivery was effected by craniotomy. In 3 cases of transverse presentation in which forceps had been applied decapitation was done.

Cæsarean section was performed in only 9 cases. In 4, it was done by the lower route. Four of the mothers and 2 of the infants died. Four of the mothers developed sepsis. Of these, 2 were subjected to the low cæsarean section.

In 11 cases (7 per cent) an examination was made prior to delivery. These included 2 cases in which a cæsarean section had been performed previously for contracted pelvis and a case in which labor was obstructed by a large tumor.

Twenty-one (14 per cent) of the mothers died in the hospital. Two of these were undelivered. Three mothers died in other institutions from the results of the delivery. Of the remaining 130, 33 (25 per cent) were morbid according to the British Medical Association standard and 19 had fever. Only 78 had an uneventful puerperium.

Forty-three (29 per cent) of the infants were dead when the mothers were admitted to the hospital, 79 were stillborn, 5 died within the first few days after birth and 2 were undelivered. Only 66 (48 per cent) left the hospital alive.

Of 112 women who were followed up, 54 were well and 58 showed some local evidence of injury sustained at the confinement. Of the 130 women who survived, only 37 became pregnant subsequently. As 82 of the 154 women were primigravidae when their serious confinement occurred, it is apparent

that a considerable degree of sterility was the direct result of the labor.

In discussing the prophylaxis, the author emphasizes the need of antenatal care for the diagnosis of cases of dystocia, tumor, and faulty presentation. However he believes that for cases in which an undilated cervix is responsible for unsuccessful delivery the only hope lies in giving the medical student a six months' course instead of a three months' course in obstetrical practice.

J. THORNWELL WITHERSPOON, M.D.

Davidson, A. H. Cæsarean Section Its History and Present Status. *Irish J. M. Sc.*, 1931, No. 72, p. 642.

The author reviews the history of the cæsarean operation from its earliest use up to the present time.

The first authentic cæsarean section in the British Isles was performed by a midwife, Mary Donally, in the year 1739. The patient recovered. The first successful section in the Rotunda Hospital, Dublin, was performed by Arthur Macan in 1889.

The different operations devised after 1876 are described briefly and the mortality of each type is given.

The author claims that in America the indications for cæsarean section are extremely broad, and that the operation is performed in a considerable larger percentage of cases than in Ireland. He emphasizes that delivery by the abdominal route is four times more dangerous than natural labor, the mortality of the former averaging 2 per cent and the mortality of the latter 0.5 per cent. LEOPOLD GOLDSTEIN, M.D.

PUERPERIUM AND ITS COMPLICATIONS

Wilson, A. M. The Prophylaxis of Puerperal Fever. *Med. J. Australia*, 1931, II, 350.

Puerperal infection may be heterogenous—being introduced at the time of delivery by instruments or the hands of the attendants or by the upward conveyance of bacteria from the vulva and the lower part of the vagina—or autogenous—having its origin in a gonococcal infection, an old chronic infection of the tubes, or septic foci elsewhere in the body. The site of entry of the infecting organism causing heterogenous infection may be the placental site, the cervix, or lacerations of the vagina and perineum.

In discussing prophylactic measures the author emphasizes the danger of attendants who may carry or transfer infection and of delivery in a poor obstetrical hospital. He states that manipulations and examinations should be limited to the minimum. Disinfection of the vulva and vaginal orifice is done most safely by cleansing with ether followed by the application of iodine. To prevent autogenous infection, gross infective foci should be removed so far as possible. The author discusses also methods of improving the patient's health before labor, measures to render labor as easy and short as possible, and the conduct of labor with minimal trauma.

HARPER M. NELSON, M.D.

GENITO-URINARY SURGERY

ADRENAL, KIDNEY, AND URETER

Fowler, H A, and Dorman, H N Perinephritic Abscess *J Urol*, 1931, xxvi, 705

The authors state that suppurative inflammation of the fatty tissues surrounding the kidney is uncommon as compared with surgical lesions within the kidney. Perinephritic abscesses may be classified as (1) those secondary to grave destructive lesions of the kidney, and (2) those which may be considered of metastatic origin.

In the eleven cases reviewed by the authors the diagnosis was based on a history of peripheral infection, unexplained fever, a high leucocytosis, the X-ray findings, and costovertebral pain and tenderness. In the cases of metastatic abscess simple drainage was followed by complete recovery.

HARRY W. PLAGGEMEYER, M D

Gutierrez, R The Clinical Management of Horseshoe Kidney *In J Surg*, 1931, vi, 657

This monograph is being published in 3 sections, of which this is the first.

It is based on 25 cases of horseshoe kidney observed during the last ten years at the New York Hospital. In 4, the condition was found at autopsy, in 2 it was diagnosed at operation, and in 19 it was diagnosed before operation.

Anatomically, horseshoe kidneys may be divided into 2 groups, the symmetrical and the asymmetrical. The first are those in which the isthmus between the kidneys connects the 2 lower poles and those in which the union is between the upper poles. As a rule the isthmus is composed of true renal parenchyma and rarely of a band of fibrous tissue. The pelvis of the kidney is anterior to the blood supply of the organ, and the ureters run in front of the isthmus. Of the cases reviewed by the author, the fusion was between the lower poles in 24 and between the upper poles in 1.

Horseshoe kidneys of the asymmetrical type present the more bizarre forms of fusion and are described by such terms as "unilateral fused kidney" and "L shaped renal fusion." They are usually united ectopic kidneys situated low in the bony pelvis or at one side of the vertebral column.

Horseshoe kidney was mentioned in the literature in 1522 as a postmortem finding. Very much later it was diagnosed by abdominal palpation or in the course of exploratory laparotomies for abdominal tumors of unknown origin. In recent years the perfection of urographic examination has made its recognition much more frequent, signs of its presence being found in 1 out of every 200 pyelograms.

The genesis of the fused kidney is best explained on an embryological basis. The exact time of the

fusion has not been definitely determined but as during its development the kidney migrates upward from its original position at the level of the second sacral vertebra to the lumbar position it occupies in the adult and at the same time undergoes rotation around its longitudinal axis it seems most logical to assume that fusion occurs between the fifth and seventh weeks of embryonic life.

The weight and size of horseshoe kidneys vary. In the author's 4 cases in which the condition was found at autopsy the weight ranged from 280 to 350 gm, a little more than the combined weight of 2 normal kidneys. The horseshoe kidney is usually fixed and deeply attached by its isthmus to surrounding structures, nerves and blood vessels. Its lack of mobility is responsible for the pressure symptoms it produces. The isthmus is of interest because of its aberrant blood vessels and its size.

The excretory apparatus of horseshoe kidneys presents many abnormalities. Because of the incomplete rotation of the organ the pelves and calyces are markedly irregular in size, shape, and position. The calyces are usually multiple. Especially striking is their reversed position. This is most marked in the lower calyces which extend into the isthmus and may cross the vertebral column. The frequent high implantation of the ureters often produces retention and hydronephrosis. Concomitant anomalies of other organs, especially the genital organs may be present. Rare cases of fusion of the suprarenals have been recorded.

The blood supply of horseshoe kidneys varies greatly. There are usually from 4 to 6 renal arteries, 1 or 2 to each hilum and 1 or 2 to the isthmus. These arteries may originate directly from the aorta or from the common iliac artery or may be otherwise anomalous. As a rule the isthmus is anterior to the great vessels, but there are records of cases in which the aorta and vena cava crossed the isthmus ventrally.

As the isthmus presses on many ganglia, nerve trunks and lymphatics, the clinical syndrome of gastro-intestinal disorders and epigastric pain is easily understood. Pressure on the lymphatic system may cause stagnation of lymph inducing infection. The absence of a fatty capsule in the isthmus increases the friction and pressure in this location.

To the group of clinical symptoms produced by the pressure of the isthmus on the vessels, nerves and lymphatics the author gives the name "horseshoe kidney disease." In discussing its etiology he says that in his series of cases he noted no striking relationship to either age or sex. Seventeen of the patients were males over eighteen years of age and 8 were females between twenty and forty years of age. Horseshoe kidney may be found at any age,

NEWBORN

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The author first discusses the origin of birth trauma. He states that many of the theories advanced heretofore were based on false assumptions and erroneous mechanical views. With the development of the simple apparatus constructed by him direct measurement of the intrauterine pressure of labor pains is possible. The apparatus consists of a small rubber bag (Charnier de Rbes) a manometer and a syringe which are connected with each other by rubber tubes and a T tube. After sufficient dilatation of the cervical os has been obtained with the fetal head high in the head slightly displaced from the pelvic inlet during an interval between labor pains and after rupture of the membranes the bag with the tube is introduced within the membrane next to the fetal head.

Measurements made with this apparatus showed that during the first stage of labor the average pressure of the labor pains ranged from 3 to 40 mm Hg and the maximum pressure was 8 mm Hg. In the second stage the pressure rose to about 5 mm Hg. In one case the maximum was an average pressure of 360 mm Hg. The well known phenomenon of birth injuries cannot be attributed to this pressure. A factor in the constitution of the child is probably of more importance.

In accordance with purely hydrostatic laws the intrauterine pressure of labor pains is transmitted equally in all directions throughout the fetal cavity. It is not the fluid brain mass. The effect as well as rupture of the vessels as the result of a negative pressure effect that is a difference between

the pressure in the blood vessels and the pressure in the surrounding skull contents not to be considered.

The author discusses the anatomical and physiological changes in the middle cranial fossa from rupture of the sphenoidal sinus. He says that the rupture of the vena magna Galei produced hemorrhage by the physiological linking. By means of roentgenograms he demonstrates for the first time the exact course of the vessels and how that linkage of the sinus by the pleural communication is the result of gas above the head is a possibility. He believes that the well known hemorrhages in this area are explained by purely mechanical production of stasis in the presence of a static condition.

In the study of a large mass of material the author has reached the conclusion that the incidence of birth trauma is sufficient to account for all of the anomalies.

Attention is called to the possibility of birth trauma. The anatomical and clinical changes suggested to the author that not only the direct or apical (externally called a physical) condition states or distensions (Lippincott) during the first few days of life but also a mechanical condition of the later years of life (general plethoric embolism of the arterial system) is a factor in the etiology of the condition.

In conclusion Mueller says that the study of birth trauma and the conclusion is still that early stage and it is still too early to find the final factors in the pathogenesis. K. L. DIER (G)

Nephrectomy was done more frequently in the cases of females than in the cases of males because in the former the diagnosis was made earlier and hence operability was greater. When the patients sought treatment they were in the third decade of life. In 66.6 per cent of the cases the tuberculous infection was found simultaneously on both sides.

An extrarenal, chronic tuberculosis was demonstrable in 55.8 per cent of the patients subjected to nephrectomy and in 86 per cent of those not subjected to nephrectomy. Genital tuberculosis seemed to have no influence on the prognosis, but pulmonary tuberculosis was an extremely grave complication. Of the women with pulmonary tuberculosis, 50 per cent died, whereas of those without pulmonary tuberculosis, only 8 per cent died. The corresponding figures for males were 60 and 26.8 per cent. Pulmonary tuberculosis was twice as common in the males as in the females. Surgical tuberculosis also made the prognosis distinctly worse.

The typical attack of renal colic is an important sign of the localization of the tuberculosis. It correctly indicated the kidney involved in all of 65 cases. Initial hæmaturia occurred in 6.4 per cent of the cases, and in 3 of these it continued for from one to two years before the next symptom appeared. Trauma may or may not be of importance.

Microscopic examination of the urine revealed pus in all cases, but in 4 no albumin was demonstrable. Tubercle bacilli were not always found in the urine. When they were not found the lesions in the tuberculous kidney were always well advanced.

Cystoscopy was done in 135 cases. In 61.5 per cent changes in the mucosa were found only in the region of the ureteral or were most pronounced in that region. In 80 of 83 cases the side of the renal disease was determined correctly on the basis of this finding.

In determining the size and form of either the healthy or the diseased kidney, the clinician should not place much reliance on roentgenography. The plain flat plate has little value and has often led the author into error. In only 5 of the cases reviewed was the clinician's diagnosis of any help.

Of 105 males, urethral strictures were found in 86 per cent. Although cystoscopic examinations and treatment with sounds were carried out repeatedly, it could not be proved that they gave rise to military tuberculosis.

Fever occurred in 51.2 per cent of the cases in which nephrectomy was done. The prognosis is somewhat better in afebrile than in febrile cases. It is least favorable in cases with a constant or markedly remittent type of fever. No conclusions as to the extent of the renal changes can be drawn from the fever curve. In cases of tuberculous pyelonephrosis and ureteral obliteration the fever varies in type, but is usually high and markedly remittent. Secondary infections render the temperature curves irregular.

One hundred and fifty-six cases of unilateral involvement were treated by nephrectomy. In 20

cases, nephrotomy was done for diagnosis, and in 16 of these nephrectomy was done later as signs of tuberculosis in the other kidney were not demonstrable. The after examination in these cases showed that the surgeon did not always correctly estimate the condition of the kidney as there was no case of bilateral involvement. Eleven of the 16 patients subjected to nephrectomy after nephrotomy have died. As these patients were favorable operative risks, the high mortality seems to be attributable, at least in part to the exploratory operation on the healthy kidney. In 5 cases, the pleura and peritoneum were injured at operation. In 4 in which the lesion was closed there were no complications, but in 1 in which a lesion of the peritoneum was not recognized death occurred from septic peritonitis. Fifty-two per cent of the nephrectomy wounds were healed within two months. Of the cases with pronounced perinephritic adhesions healing occurred within this length of time in only 32 per cent.

Of the 155 patients traced, 65.2 per cent were alive and 55 per cent were completely cured. Fifty-four (35 per cent) of the patients died within the first six months. It appears that all fatalities due to the operative intervention occur within this length of time. The cause of death in the first six months is usually military tuberculosis or tuberculous meningitis, whereas the cause of death later seems to be secondary infection.

Thirty-six patients were not subjected to nephrectomy because their condition was considered too grave to permit the operation. Twenty-eight died within the first year. Three were clinically cured of the renal tuberculosis, and 1 continued to work for nineteen years. LOUIS NEUWELT, M.D.

Stellwagen, T. C., and Muellerschoen, G. J. Conservatism in Surgery of the Kidney. *Surg. Clin. North Am.*, 1931, 11, 1355.

Renal surgery should not be attempted until a careful study has been made of all of the problems presented by the case. Permission for nephrectomy should be obtained as conservative procedures are often inadvisable and removal of a kidney is frequently necessary to save life.

The chief danger in renal surgery is hæmorrhage. The blood fitness for operation should be determined. For handling the renal pedicle the authors have devised a new type of clamp or compression ring in which constriction is obtained by means of a rubber tube which can be left *in situ* after closure as a safeguard against postoperative bleeding.

In cases of stone it is of great importance not only to remove the stone, but also to make every effort to remedy defective drainage. The authors attempt to control infection and stasis as much as possible before they operate. They do not have much faith in urinary antiseptics.

The authors operate on the kidney with the patient in the prone position on a bridge with double inclined planes. The incision is a modified Mayo incision. The transperitoneal route is used only when

but is usually overlooked in childhood and not discovered thereafter until a superimposed infection sets in. The principal factor in the syndrome of horseshoe kidney with or without disease is the chronic irritability of the organ and of the structures in its vicinity. The pressure exerted by the isthmus is bound eventually to cause renal and vesical symptoms which combined with the epigastric or umbilical pain constitute the true horseshoe kidney syndrome.

In addition, as a result of the abnormal position of the pelvis and uterus which pass first of the isthmus there is a disturbance of rhythmic contractions which causes the development first of pyelitis and eventually a dilatation of pyelonephritis urinary stasis back pressure and cystitis. It is the cystitis which often leads the patient to peritonitis if for mention.

Pressure of the stimulus on the atria may cause a reflex increase in compensatory cardiac hypertrophy and thrombosis of the leg vein and phlebotomy of both legs due to electrolytic disturbances have been commonly observed.

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The relief afforded by decapulation in cases of nephritis has been attributed to the temporary improvement in the blood flow which follows the

operation However the blood flow through the kidney is increased temporarily also after simple mobilization

The specific nerves of the renal capsule are not only afferent but also sensory. This is proved by the observation that at operation under local anesthesia the kidney does not become insensitive to mechanical stimuli until decapsulation has been done.

The plantar muscle in the ankle capsule has been ruled out as a factor in the production of localized renal pain as it is insufficient in amount and has no nerve connections to it have been discovered.

The entire nervous system of the renal parenchyma distributed to the blood vessels and the cells of the tubules and glomerular observation have demonstrated that it is quite insensitive to mechanical stimuli.

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Neither slow nor rapid distention of the bladder produced reflux. Reflux was obtained only by markedly distending the bladder at a pressure above the ureter. Lozocid is that in man under normal conditions a vesico-urethral reflux can be produced by merely an obstructive emptying of the bladder. E. G. VETTER, MD

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The material reviewed consisted of 19 cases of renal tuberculosis in 56 of which nephrectomy had been performed. Of the patients 55 of whom had been subjected to nephrectomy were re-examined. Fifty-four and six tenths per cent were males. The majority of the males were in the group of patients who were treated by nephrectomy.

The bowel is carefully evacuated pre-operatively. On the operating table the lower colon is irrigated by means of a needle inserted through the bowel wall, the solution being allowed to flow out through a proctoscope and the bowel clamped above the site of operation. After mechanical cleansing, the bowel is irrigated with 250 c cm of a 1 per cent solution of mercurochrome and packed with a strip of gauze through a sigmoidoscope, the gauze extending above the site of the anastomosis. The ureters are isolated and intubated with a special catheter with a cuff. The bowel wall is then prepared as in the previous operation, a bit of the gauze being drawn through the stab wound at the lower end of the incision. The catheters are fastened to the gauze and the latter is then cautiously withdrawn, carrying with it the catheters. The ureters are fastened to the bowel wall by a suture and buried as in technique No 1. The peritoneal defects are sutured to prevent adhesions and subsequent obstruction of the intestines.

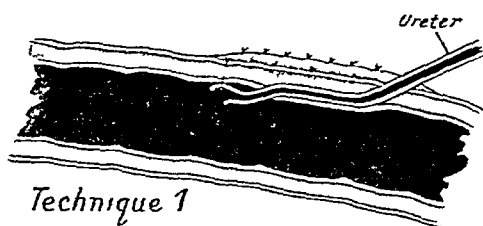
The catheters usually come away after from seven to ten days as the result of pressure necrosis at the site of the ligature fixing the tube into the ureter.

The advantage of this modification is that both ureters may be transplanted at one operation and that there is no interference with the urinary flow. The author reviews thirty-five cases operated upon by this method, sixteen for carcinoma of the bladder, ten for extrophy of the bladder, four for vesicovaginal fistula, four for tuberculosis of the bladder, and one for papilloma of the bladder. There were seven deaths.

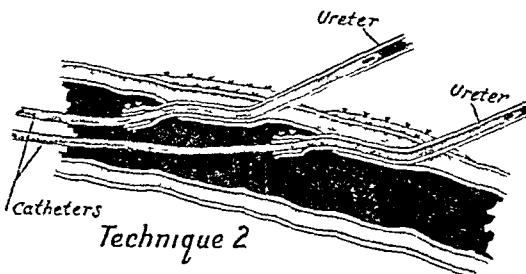
One of the distressing complications of the tube method is occlusion of the tube by incrustations. The incidence of this complication can be lessened by irrigating the tube with salt solution and administering acid sodium phosphate. In the author's experience in the transplantation of sixty-three ureters, eight catheters became completely blocked. In three of these cases the catheters were removed by cutting the ureters through the rectum, and in five a ureterostomy was done.

The author advocates technique No 2 for cases of carcinoma of the bladder. The ureters can be implanted and a total cystectomy done at one stage. His statistics include nine such cases. Of the four females, two succumbed to the operation and two are alive and well three and two years after the operation. Of five males, one died five months after the operation and the four others are alive and well.

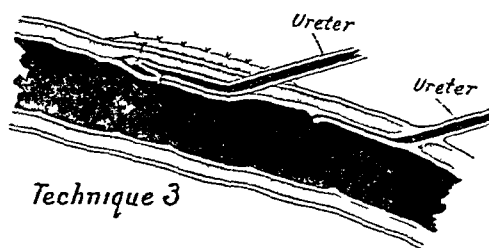
Technique No 3 is based on the principle that a ligature which incorporates both ureter and bowel wall will slough through in a few days thus forming a fistula between the ureter and bowel lumen. The results of experiments on animals warrant such a conclusion. This operative procedure obviates the necessity of opening the lumen of the bowel at the time of operation, thus lessening the danger of infection. The author reports the case of a child twelve months old in which it was used. After the implantation of one ureter urine was flowing into



Technique 1



Technique 2



Technique 3

Three plans of technique for transplantation of the ureters

the bowel at the end of seventy-two hours. Twenty-six days later the other ureter was implanted in the same manner. The author states that technique No 3 is still in the experimental stage but exhibits great promise.

The ultimate goal is a technique which can be employed in cases of carcinoma of the bladder. It is believed that technique No 2 meets the requirements. However it is as yet too early to make any definite statement. In quite a number of cases postoperative study has revealed dilatation of the ureters and intermittent attacks of pyelitis during the first few months after the operation whereas in others no such changes have occurred.

In conclusion the author says, "Every candidate for the operation of ureteral transplantation is already either hopelessly ostracized from ordinary society or doomed to certain death. While a large percentage of the forty-eight patients we have operated upon have been hopeless cancer cases and have therefore died, there are still twenty patients who are very well and happy. One has grown from a child of six years to a woman of twenty-one and is in perfect health."

JOHN A. WOLFE, M.D.

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GENITAL ORGANS

Lowsley, O S, and Kirwin, T J Suprapubic Prostatectomy *J Am M Ass*, 1931, xcvi, 1669

In performing a perineal prostatectomy the surgeon needs several skilled assistants, whereas in doing a suprapubic prostatectomy he requires little aid. If the internal sphincter is dilated, suprapubic enucleation is indicated, but if the prostate retains its natural anatomical relations the perineal route is advisable. By the choice of the proper route, preservation of the sphincter will be possible.

The number of stages in the operation depends upon the conditions in the particular case. Since the authors have used the transverse incision of Macgowan they have found the three-stage operation described by Williams unnecessary.

For the preliminary cystotomy, they have modified the transverse incision, making it in the shape of an inverted V. If only a small exposure is required the method used by Kidd gives very good results.

Following suitable pre-operative preparation, the prostate is exposed through the suprapubic fistula with the patient in the Trendelenburg position. The capsule is opened at its most prominent point with scissors. The prostate is enucleated with the index finger. Great care is taken not to injure the top of the vesical orifice as hæmorrhage may be caused by injury to Santorini's plexus. In suprapubic prostatectomy, bilateral vasectomy should be done as the ejaculatory ducts are usually injured. In the perineal method this is not necessary as the verumontanum is not injured. After the enucleation of the prostate remaining pieces of tissue are cleared away and bleeding points are ligated. The cavity is then packed with petrolatum gauze.

The packing is removed from thirty-six to forty-eight hours later. Bugbee suggested the use of 2 or 3 oz of 2 per cent procain borate to lessen the pain of its removal. On the sixth day a ureteral catheter is inserted, and on the seventh day the patient is permitted to sit in a chair for three-quarters of an

hour. Three weeks after the operation the sphincter is dilated.

The authors review fifty cases in which a suprapubic prostatectomy was done. Forty-four of the patients presented benign hypertrophy of the prostate, five had carcinoma, and one had granuloma. The oldest patient was eighty-five years of age. The average length of time in the hospital was forty and twenty-three hundredths days. There were four deaths. These were due respectively to shock, cardiac failure, coronary thrombosis and multiple abscesses associated with stone in the left kidney. After the operation, control of urination was satisfactory in thirty-four cases, perfect in six, fair in four, and absent in two. In one of the latter a punch operation was done before the prostatectomy. Transfusion was necessary in two cases, and a pleural effusion developed in one case.

CLAUDE D. PICKRELL, M D

MISCELLANEOUS

Doré, G R. The Urinary Syndrome in Biliary Pneumonia (Le syndrome urinaire de la pneumonie bilieuse). *Arch d mal d reins et d organes genito-urinaires*, 1931, vi, 20.

Ten cases of bilious pneumonia were studied. In the author's opinion the jaundice accompanying pneumonia is due, not to the hæmolytic action of the pneumococcus or infectious hepatitis, but to a toxic lesion of the hepatic cells which causes biliary retention. In the cases reviewed, chemical studies of the blood and urine revealed an increase of bilirubin, non-protein nitrogen, and urea nitrogen. The marked excretion of urinary chlorides which is characteristic of pneumonia was absent. In one case the blood sugar was increased to 300 mgm per 100 c cm without the appearance of glycosuria. The excretion of bile by the kidneys seemed to interfere with the elimination of other substances and to cause their retention in the blood. Fatal uræmia occurred in two cases and cholesterin retention in two.

GEZA DE TARATS, M D

BLADDER URETHRA AND PENIS

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Th s t p f t h p e t e h o w n i l l
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Sarcoma associated with Paget's disease is slightly different histologically from the usual uncomplicated osteogenic sarcoma. It shows more giant cells and considerable lymphocytic infiltration. Some pathologists suggest that it be classified separately. The 100 per cent mortality is due partly to delay of the patient in noticing symptoms of sarcoma when similar symptoms have been present so long because of the osteitis and to the fact that the degree of malignancy is often greater than in simple sarcoma.

No form of treatment has yet been found efficacious, and no five-year cures have been recorded.

WILLIAM ARTHUR CLARK, M.D.

Balestra G. Osteo-Articular and Osseous Changes in Syringomyelia (Delle alterazioni osteo articulari ed ossee nella siringomielia) *Radiol med*, 1937, LVIII, 1515

The author reports five cases of syringomyelia in which bone and joint changes were noted and reviews the characteristic clinical and roentgen findings in osteo-articular lesions associated with syringomyelia. He discusses the roentgenological differential diagnosis of other osteo-articular lesions from those associated with syringomyelia and calls attention to the great similarity of the latter to the osteo arthropathies associated with tabes. He is of the opinion that periarticular calcifications and ossifications are more common in syringomyelia than in tabes. He reports a case of paravertebral ossification in the cervical region.

PETER A. ROSE, M.D.

Jones, Sir R. The Problem of the Stiff Joint *Brit M J*, 1931, II, 1019

Stiffness of joints is generally due to the presence of extra-articular or intra-articular adhesions or both. The adhesions may be the sole cause of the stiffness or a complication of disease.

An adhesion is a pathological band restricting the normal movement between two adjacent tissues. It is caused by a serous or hemorrhagic exudate from the blood vessels of inflammatory or traumatic origin. At first this exudate is soft and elastic but later it becomes more definitely fibrous, and in its latest stage it is a cicatrix.

It is a rule of practice admitting of few exceptions, that a joint stiffened by simple intra-articular or extra-articular adhesions should be moved actively or passively, even forcibly if necessary. However with certain exceptions, a joint stiffened by arthritis should be kept at rest until the pain and inflammation have subsided, when movements of a special kind may be allowed.

When the movement of a joint is limited in all directions the joint is or has been involved by arthritis but when movement is limited in only certain directions and is normal in others the joint is not arthritic. This differentiation does not apply to septic infections involving the tissues outside joints, fractures within joints, or joints temporarily stiffened from long fixation.

In many types of arthritis movement is hoped for after subsidence of the inflammatory symptoms, but in tuberculous arthritis in the adult, especially when weight-bearing joints are involved, bony ankylosis is desirable and an ankylosing operation is justifiable as soon as the diagnosis has been made.

In certain cases of chronic arthritis it is sometimes possible to prevent the formation of firm adhesions. However, this should be attempted only after the painful stage has passed. The patient may be allowed to move the joint within a painless area or the surgeon may employ passive movement once a day. This treatment may be continued if neither persistent pain nor a reaction occurs. In the non-arthritic joint, movement is needed before the adhesions have formed or before they have become firm. If ligaments are torn they should be protected from strain until movements can be practiced safely. Massage immediately after the injury, before effusion has taken place, checks hemorrhage into the part, stops the effusion of lymph, relieves pain, and leaves the tissues ready to begin immediate union. Massage does not include movement. Local effusion of blood should be lessened by pressure.

Prolonged rest of a healthy joint within the limits of its normal range of movement will not give rise to more than a temporary stiffness. In the cases of adolescents and young adults, this stiffness is easily overcome, but in the cases of aged persons it is more pronounced. When very intractable stiffness follows extension in a case of fracture near a joint, other factors than rest are involved. Unrecognized injury of the joint or a reaction from the stretching of the capsule and ligaments may have occurred. When a fracture occurs in a middle-aged or aged person and damage to a joint is probable, the joint should be slightly flexed from time to time and should never be fixed in the fully extended position. A joint stiffens much more readily if it is rested in the fully extended rather than the slightly flexed position.

In arthritis we may be sure that a joint has recovered from disease when its range of movement is not diminished by use or when, in case of ankylosis, its position is not changed by use. When the range of movement increases, reliance for improvement of function should be placed on active rather than passive movements. These should be practiced without weight bearing. If the increase in the range of movement ceases and the condition remains stationary for a period, passive assistance may be considered, but forcible manipulation is contra-indicated.

In the prevention of the formation of adhesions and the cure of the less resistant types, active movements are to be preferred to passive movements. Active movements are sure to be gentle. Passive movements, unless very skillfully performed, are apt to add to cicatricial tissue and interfere with repair. The masseur should be warned not to employ the "pump handle" method.

Any dislocation or fracture in the region of a joint may be followed by traumatic myositis ossificans.

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

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a

and sixteen of the latter were engaged in agricultural pursuits. The condition occurred in the right wrist alone in twelve cases, in the left wrist alone in twelve cases, and in both wrists in two cases.

The importance of trauma as a cause is disputed, but twenty patients whose cases are reviewed gave a history of trauma. The trauma was seldom severe.

Pathologic anatomical observations have been as unsatisfactory in revealing the nature of the disease as clinical observations. Of five histologically studied cases, a traumatic injury could be definitely demonstrated in four. The agreement between the roentgen findings and the pathological changes reported by some could not be confirmed.

While there is still a difference of opinion regarding the treatment, most authorities are in favor of operative extirpation of the diseased bone. Of thirty-five cases reviewed by the author, only seven were treated surgically. Of the twenty-eight patients who were treated conservatively, only one remained free from symptoms. The others had more or less severe subjective symptoms and some of them suffered a reduction of their working capacity. Nevertheless the results of conservative treatment were so much better than those of surgical treatment that the author doubts the advisability of operation.

In conclusion Christensen says that the frequency and chronic course of the condition and the reduction of working capacity it causes are of importance from the standpoint of insurance. E. HAAGEN (Z)

King, E. S. J. Cystic Development in the Semilunar Cartilages. *Surg., Gynec., & Obst.*, 1931, lxxi, 606

Cysts of the semilunar cartilages occur much more often in males than in females and are more common in the external than in the internal meniscus. In most cases there is a history of trauma. The cysts vary in size up to $\frac{1}{2}$ in in diameter. After they reach a certain size they remain stationary.

Microscopic examination shows the cyst walls to be composed of fibrous connective tissue or fibrocartilage and to be lined by elongated cells.

Hypotheses as to the origin of the cysts fall into two groups. Those of one group are based on the assumption that the cells lining the cyst are endothelial, while those of the other group are based on the belief that the cyst lining contains connective tissue and that the changes are degenerative. The authors favor the latter because thickened blood vessels are found in the cystic area and the earlier changes are those of "mucoid degeneration" in the connective tissue. The material becoming more fluid eventually forms cysts which gradually enlarge.

Operative removal of the cysts results in cure.

RUDOLPH S. REICH, M.D.

Mandl, F. Injuries of the Lateral Ligaments of the Knee Joint (Die Verletzungen der Seitenbänder des Kniegelenks). *Med. Klin.*, 1931, vi, 1309

Injuries of the lateral ligaments of the knee joint are described in the literature rather seldom although

they are just as common as injuries of the crucial ligaments. Lacerations of the lateral ligaments often result in a flail joint with various subjective symptoms and the development of arthritis deformans. Anatomically, the median lateral ligament, which consists of 2 bundles, is of importance. It is flat and connected with the medial meniscus. The lateral collateral ligament is separated from the lateral meniscus by a space. In the extended position of the knee both ligaments are taut, and when both crucial ligaments are severed they are able to hold the knee joint firmly. In the flexed position of the knee they are relaxed and the crucial ligaments hold the knee joint firmly. The median lateral ligament also prevents abnormal extension and outward rotation, but the lateral collateral ligament does not prevent inward rotation. These facts explain why the internal lateral ligament is injured more frequently.

In the internal lateral ligament the following injuries may occur: (1) complete or partial separation from the tibial insertion, (2) complete or partial separation from the medial condyle of the femur, and (3) tears in the course of the ligament. Injuries of the last type are rare. Excluding the very severe injuries, the cause of laceration of the ligament is usually an indirect trauma, most frequently excessive rotation of the leg with the thigh fixed.

Separation of the ligament from its points of insertion causes pain on active or passive motion. The points of insertion are extremely sensitive to pressure. As these are above or below the articular space, this finding is of importance in the differentiation of the injury from a meniscal lesion. The sensitive area at the site of separation is definitely circumscribed. The treatment consists in immobilization of the knee with splints and an Unna paste dressing for one or two weeks followed by hot air treatment and massage. The author has seen about 120 cases.

Tears in the course of the lateral ligaments without associated injuries are always followed by a severe effusion into the joint. The pain is less severe. The characteristic sign of the injury is abnormal mobility of the leg in abduction or adduction. The articular space is not sensitive to pressure. Active motion is possible only with difficulty. Passive flexion is painful. In cases of slight injury the treatment should be conservative. A plaster cast should be applied for four or five weeks with the joint in adduction or abduction according to whether the internal or external ligament is torn. Although the prognosis is relatively good for general function, a certain degree of laxity of the joint often persists permanently. This can be corrected to some extent by massage and electrical stimulation of the muscles. In cases of severe injury early operation should be done.

In cases of tearing of the lateral ligaments with internal joint injuries the first object of treatment, in the presence of a compound injury of the joint, should be the prevention of infection. When the joint cavity is unopened but the lateral ligaments

months. If the articular insufficiency persists, surgery should be advised. If the patient refuses to allow operation, a prosthesis must be used. Of the many surgical procedures advised, that of Hey-Groves with or without Putti's modification, has been employed most frequently.

In the first two of the six cases reported in this article the author used Putti's technique, but in the four others he employed a technique which he devised after observing the good results obtained by Lange with silk. This technique is as follows:

The ligaments are approached by a vertical transpatellar arthrotomy which permits complete exploration of the joint. Holes are made in the bone in the direction of the ligaments. Then instead of a piece of fascia lata, six heavy strands of silk are used to replace the injured ligaments. The silk is sterilized by boiling it in a 1:1,000 solution of oxycyanide of mercury for several fifteen-minute periods. The silk strands are passed through the holes made in the bone and then fixed to the soft tissues in pairs by means of a Reverdin needle. Before the ends of the silk are tied the knee is flexed to an angle of 140 degrees.

After the operation the knee is immobilized in slight flexion for forty days. Active movement is begun about twenty days later. After removal of the cast, physical therapy is employed. According to Lange, the silk becomes surrounded by bundles of connective tissue which eventually destroy it.

The results in the author's four cases were satisfactory. W. H. MARTINEZ, M.D.

FRACTURES AND DISLOCATIONS

Ehason, E. L., and Ebeling, W. W. *Modern Trends in the Treatment of Fractures*. *Surg. Clin. North Am.*, 1931, 11, 1295.

The authors review the methods and results in the treatment of fractures in 3 chronological periods—from 1903 to 1924, from 1924 to 1928, and from 1929 to 1930. Open reduction was done in 4.6 per cent of 5,510 cases treated in the first period, 6.2 per cent of 780 cases treated in the second period, and 14 per cent of 284 cases treated in the third period. Open reduction has become more frequent because of increasing demands for more accurate approximation made not only by surgeons but also by patients. Open reduction is often elective, and when good function will result without perfect approximation it may be advisable to allow the patient to make the decision regarding operation.

The chief indications for open reduction are failure of closed reduction, failure to maintain the approximation, delayed union, and non union. It is interesting to note that while delayed union was the indication in 42.8 per cent of the cases treated in the second period reviewed by the authors, it was the indication in only 18.5 per cent of those treated in the third period. The decrease is undoubtedly due to a growing appreciation of the causes of delayed union.

In the authors' clinic the use of the steel plate (Lane or Sherman) is decreasing and there is a tendency to maintain approximation without internal fixation after accurate reduction by open operation. In the third period reviewed the femur was very seldom subjected to open surgery, perhaps because more attention has been paid in recent years to skeletal traction.

For the best results, every fracture should be regarded as an emergency and reduced at once unless the patient is in extreme shock. A roentgenogram should be made before and also after the reduction without, in the latter instance, allowing the patient to go home and come back for it the next day, as is often done. WILLIAM ARTHUR CLARK, M.D.

Suris, J. S. *Osteosynthesis in the Treatment of Compound Fractures* (La osteosíntesis en el tratamiento de las fracturas abiertas). *Rev. med. de Barcelona*, 1931, VIII, 363.

The author reviews thirty-eight cases of compound fracture treated by osteosynthesis. The article is profusely illustrated with photographs and roentgenograms of the fractures, photographs of the instruments used, and diagrammatic sketches of the steps of the operation, and is supplemented by an exhaustive bibliography.

In the thirty-eight cases reviewed there were twenty-seven fractures of the tibia and fibula, three of the ulna and radius, three of the humerus, and five of the malleoli. In thirty cases the wound was closed without drainage and in seven with drainage. In three of the latter, Carrel's continuous drainage was used. Cure resulted in twenty-nine cases. In six cases there was intolerance of the foreign body, gangrene of the skin occurred, leaving the plates exposed, but there was good consolidation of the bone. Three of the patients died, one from shock and two, who were old persons, from bronchopneumonia. There was one case of gas gangrene. In this case the injury of the soft parts was so serious that amputation should have been performed. In the case of death from shock the patient was already in a condition of shock before the operation from other injuries suffered at the time of the accident. In one case osteitis developed after one hundred and twenty days as the result of faulty technique, and in one case pseudarthrosis developed because osteogenesis was defective on account of the patient's condition.

The advantages of osteosynthesis are that the fragments are held firmly in place so that the functional incapacity which results from any fracture is reduced to the minimum and angulation shortening, injury to the soft parts, hemorrhage, infection, and the interposition of fragments, a frequent cause of pseudarthrosis are usually avoided. In joint fractures, osteosynthesis is the only method of preventing infection, closing the joint completely, and preserving joint function.

A careful technique is of the greatest importance as most failures are due to technical errors. Frantz

In the cases treated conservatively the average duration of treatment was forty-two days, and in those treated surgically it was one hundred and four days. It must be remembered, however, that the cases treated surgically were treated unsuccessfully by conservative measures for a considerable time before the operation. Conservative treatment was followed by complete cure in seventeen cases (65.5 per cent) and by considerable improvement within from four to eight weeks in six cases (23 per cent). In three cases (11.3 per cent) which were treated partly by conservative treatment and partly by operative treatment a cure was obtained only after several months or the condition remained unchanged.

The thirty contusions and distortions of the coccyx were judged from the same standpoints as the fractures and dislocations. The complaints were in general somewhat less. The average duration of treatment was thirty-one days. A complete cure was obtained in 76 per cent of the cases, considerable improvement in 20 per cent, and no improvement in 4 per cent.

In order to determine the exact mechanism of origin and the anatomy of injuries of the coccyx, the author carried out experiments on cadavers in which, with the body in the prone position, he dealt a severe blow on the region of the coccyx with a wooden hammer. These experiments have only a relative value because in the cadaver the muscular tension and the general tissue tonus which are of considerable importance in the occurrence of fractures during life are absent. It was found, however, that a forceful dynamic blow on the coccyx caused usually a transverse fracture and rarely an oblique fracture, but never a longitudinal fracture of the coccyx. Dislocations could not be produced experimentally.

On the basis of his findings the author classifies injuries of the coccyx as follows: (1) contusions of the coccyx, (2) distortions of the sacrococcygeal articulation and of the intercoccygeal articulation, (3) uncomplicated dislocations, (4) uncomplicated avial fractures, (5) dislocation fractures, and (6) partial fractures (lateral, paravial avulsions).

Becker concludes that for the occurrence of a fracture or dislocation of the coccyx an intensive trauma is usually necessary. Under normal conditions the coccyx is so formed and situated that an ordinary fall on the gluteal region does not injure it. However, a fall on a protruding resistance may injure it severely, and the frequently occurring individual anatomical peculiarities in its structure may be responsible for the production of a fracture or dislocation by even a relatively slight injury. Fractures of the coccyx occur more often than is generally believed. In the material at Suval they constitute 6 per cent of pelvic fractures.

Every fracture or dislocation of the coccyx is painful. The pain begins immediately after the injury and is usually so severe that it renders the patient unable to work. Of decisive importance in

the diagnosis are the findings of palpation. Palpation should be carried out with the patient on his side. The index finger of the examiner should be introduced into the rectum and the thumb placed over the coccyx so that the form, size, and mobility, alignment, and crepitation can be determined between these fingers. A correct diagnosis is not always possible even with the most careful clinical examination. Roentgen examination usually demonstrates a dislocation or fracture of the coccyx definitely only when there is a distinct dislocation.

The local treatment consists preferably of rest in bed and immobilization of the rectum by means of opium for a few days. When there is a dislocation, digital reposition should be attempted. If reposition and retention are impossible and if severe pain persists for a considerable time, operative removal of the coccyx is indicated. From the very beginning the treatment must be directed toward the prevention of coccygodynia, especially in the cases of persons in an abnormal or particularly labile psychic and nervous state. Coccygodynia may be of traumatic or non-traumatic origin. In most cases it is of traumatic origin with superimposed neurotic and psychoneurotic disturbances. ZILLMER (Z)

Lund, H. J. Fractures of the Femur. Treatment by the Russell Method of Traction, Report of Twenty-One Cases. *Arch Surg*, 1931, XLIII, 889.

The Russell extension method consists of compound extension in which a pull about 80 per cent vertical and 20 per cent horizontal is obtained from a sling under the knee to a pulley on the longitudinal bar of a Balkan frame and a pull 100 per cent horizontal is obtained from a spreader attached to adhesive on the lower leg. The horizontal extension is produced by the same rope, which passes up from the knee sling over the overhead pulley, down through a fixed pulley at the foot of the bed, through a movable pulley on the spreader at the leg, and then back to a second fixed pulley on the bed and down to the weight. By the laws of mechanics the pull on the leg is twice the amount of the weight applied. Only an 8-lb weight is used.

The method is simple, easily applied, and comfortable for the patient. The adhesive must not extend above the knee. The leg is in slight flexion at the knee and in abduction of about 10 degrees from the midline. Pillows are used under the knee and under the thigh to prevent sagging of the femur fragments. The treatment is the same whether the fracture is in the upper, middle, or lower third of the femur, and is of value also for intertrochanteric fractures.

In three cases of intertrochanteric fractures the average period of traction was nine weeks, the average length of time before weight-bearing was begun was four months, and the average period of disability was nine months.

For fractures of the proximal end of the femur more abduction is usually necessary. In seven cases of fracture of this type the average period of trac-

says that int l rance is caused by pressure on the bone excc ding the n rmal lum is of elasticity f the bone and by primary or secondary mobility of the material or th fragments The a thor believes that it is due ther to infection or to mobility of th mat al or fragm nts If metal pl t s ar u ed th y should be adapted perf ctly to th surfa e of the bone Th perforat ns wh ch b ld the s e s u g the plate mu t b straght and the screws must run par lly w th each oth and perpendicular to the surfa e of the bone If the screws are bl que they will exert p e sur on the bone in differ nt d e c t i o n s and tend t b c m e l o e Th same care must be ex c e d n th u e f Cuneo b oks and wire l g a t u e The per osteum should nev r be d tached and n spac h ld be eated between the s f parts and the bon

The ideal m thod of c m p l t g th operat i o n s is by immediate closu e of the w und with ut d a n age but f r o e than e ght hou s h a el p s e n e the accid nt and the w und is badly n f e d m mediate l ure is d n g o u d e t n a l f i a t i o n a p r f e s s i b l e to int n a l y n t h s i s Roentgen g a m s sh uld be tak n f t y ght h u f t the oper t o n and at nt r a l t h o u g h t the c u r s e f h e a l i n g After about thr e w e e k s b g n n i n g c a l l s fo m a t i o n a n b s e n a c l e a r z o n e o u n d the fo e g n m a t r i l i d e n e f a b r p t n f b n e and mobility f the materi l In cas s of compound f a c t u e p l a t s p r i o r t a t u o n t i o n W h n the e n t g e n g r m h w c n s l i d t i o n the a t m a y b e m d l o p a t n d p r t o p e r t e c a s a s m p t n t a the op e a t n t s l f

F H n d F b e r k The F c t i o n of the E l l n of Blood in the E l l g f Fracture (Z B d t g d B l e g u s e b d f k t h l u g) D t h Z t h f C h 93 x m 538

Op m o n s d f f e g a r d s g th i m p o r t a n t f th h a m a t m a n i f a t u r s B s e e s n s u h f l u o n s a stimulus to b o g e n a t n and a f a b l e n u t r i m d u m f the u g a l l a t s u H l d b n d and late L e r j e c t d t h i s t h e o r y c l i n g a t t e n t s n t t h u u l l y g d h e a l n g w h a f l o b o n e s u t u e a n d t t m y l x l m e d t t the n u t r i t i o n of th g m n a l t s u s o c c u r s e n t e l y t h o g h n m u s b l o o d s s l w h e a s t h s t i m u l a t n m d c d b y th e f f n b l o o d a f f s a l s o the r r u d i g c n e c t i s w h c h b a n o s s i l y i n g p o w e r b u t the p p e t y of f r m i n g s c a t u H e g a d d l g e f l u s n s f b l o o d m e i n j u r s u t h a n b e f i c i l i n the h e a l g p o e Th i m p o t o n of th h a m a t o m a c a n b e d e t e m n e d o n l y b s b c h e m i a l t u d e and b y a n s w e r i n g the q u e s t i o n e g a r d i n g the b n d n g of c a l c i m b y the e f f u s i o n I f a l a r g e l y w i d e w o u n d e f f n t a k u p m u c h c a l c i u m the h a l g f t h f a c t e w i l l b e s l o w w h e r e a s i f the e f f i s m a l l and r a p i d l y a b s o r b e d t h n t a e d c a l c i u m w i l l b e r a p i d l y i b e r a t e d and m v b e u t i l i z e d f o s f o a t of th c a l l u s

The authors attempt d to solv the probl m by exper m n t s n a n i m a l s They w e a b l e to d e m o n s t r a t e t h a t e v e n b l o o d e f f u s i o n s a t a d i s t a n c e f r o m b o n a t r u p a l u m t a k i n g i t f o m the b l o o d They t h e e f o b l e e t h a t a n e f f u s i o n of b l o o d n e a r a f a c t u r e d a w s a l c i u m f r o m t h g e a l r u l a t i o n a s w e l l a s f r m the a d j a c e n t b o n e They c o n c l u d a l s o t h a t w h n the c i u l b o n g o o d the c a l c i u m i n the h a m a t m a c o m e s c h e f f i m t h l e n e a l c a s c u l t n b u t w h e n the c i r c u a t i o n s p o o t h e f f u s i o n d r a l u m f r o m t h b o n s a n d t h a l l u s The e f t h h e a l g of f a c t u r e s d e t e r m i n e d b y the c n d i t i o n of the c i r c u l a t W h e n the c i r c u l a t o n g o o d e a l g e f f u s i o n m a y s r i v e a s a c a l c i u m d p o s f r b o h a l g

B c k F Th Tra m t l o g i c a l A p e c t s f Fractu nd Dislocat i o n f th Coccyx nd f T u m o r s C o c c y g o d y n i n t h B a l f C l i n i c a l d E x p e r i m e n t a l I n t i g t i o n f f l o m d h B t g d e r f k t e d L t d e s b t b e d d t r a m t a k e n C o c c y d y n i f G r u d k l a c h d r p e m t l i t t h u g) S h Z t h f U n f l m d 93 333

The f a c t o r s t o n j u r e f the c o c c y o f f b o m c h n and f q u e n t l y l e a d to c o c c y g o d y n a i n d u c e d t h u t h r i s m k c a r e l t u d y f s u c h a j u r i o t h b s i s of a l a g e n e c h a l m a t e r i a l t h c e s e p o t e d i n t h l i t e r a t u r e and e x p e r i m n t f i n d i n g The m a j o r i t y of the t e t b o k s o n f a c t u r e and d i s l o c a t a s m e t m a n y o n e s of the c o c c y o f f b r e s i f y r e p a t a t a l l A t t h e r e g u l a r c l i n i c a l B a c k e i g h t s e a n j u r i o n of the c o c c y — f i c f r a c t u r s a n d t h c d i s l o c a t i o n s — h r b e e n t t d n the l a t s i x t n y r a I n n i v t w c a s e s d i d t h p a t i e n t t h h p a t i e n t s m e d i c a l l y f i r the i n j u r y A t h e w a s n m a r k e d d i s c a t i o n i n t h f the c a s b t h w e r t e a t e d c u r r a t e l y Th t o t h e r c a s w e r t e a t e d s u r g i c a l l y a c o n s e r v a t i o n e s e u n u c c e s s u l I n t h the u c c y x n d r i t h o n l y t h d i s t a l p o t n f the c y x w s m e d O f the t w e t r a t d e r r a t i v e l y a u w s o b t a n e d n o n e a n d i m p v e m n t t h o t h r O p e t e t r e t m n t s f l l w e d b y c u t t w c a s e s i m p r o m n t s n t w c a s n c h n g o c a s e a n d a g g r a v a t i o n f t h s y m p t o m s n c a s e

The m t l f f the S w s A c c i d n t I n s u r a n c e I n a t t e t e S l f t h p e o d f o m 924 to 1925 o n t d f i x t y c a s e s A m g t h r n e t h r y d e f a c t e s a n d d i c a t i o n s n d t h t y q e s t o n a b l f t e s n t u n d d i s t o l i n a O f the d f i n i t f r e s a d d i c a t i o n s t w e l e (30 p e r c t) o c c u r d n s m l s n d e i g h t e e n (60 p e r c t) m a l e s f t h m) n i t y f t h a s e the t r e a t m n t s a c o n s e r v a t i o n O l y t h r c a s w e t t t d g r a d u a l l y d u g i t a l t a t m e n t w g e i f y a s the c a s e s f p t n t w h o c o m p l i n d f s e v e r e p a s f m n t h f t h j u r y The g e d r a t f t t m n t a l l s e s w s f t) d a

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Peracchia, G. C. The Surgical Treatment of Varices (Sobre el tratamiento quirurgico de las varices) *Clin y lab*, 1931, vii, 362

The author reviews the history of the treatment of varicose veins

Trendelenburg's method of single saphenotomy probably has only one advantage, viz, the anatomical and functional restoration of the vein with a consequent decrease in the danger of embolus. Otherwise it is insufficient as it abolishes only one of the causative factors, the superficial reflux from the heart

Ligation of the popliteal vein, Parona's method, can be applied only in cases of superficial varices limited to the leg and does not affect the superficial backflow or the regurgitation from the deep veins

Saphenofemoral anastomosis prevents the superficial venous reflux, but has been abandoned because it is difficult and likely to result in thrombophlebitis with embolism

Ledderhose's saphenotomy by multiple longitudinal incisions of the leg is inadvisable because it is frequently followed by recurrence and it does not satisfactorily relieve the indurated oedema

The first surgeon of modern times to use saphenectomy was Schwartz. Babcock's extirpation shortens the operation, but does not permit ligation of the branches. Extravasations of blood occur and predispose to phlebitis and embolism. A better procedure is partial saphenectomy under vision or in segments. The skin is incised longitudinally following the course of the varicose vein. It is then dissected as far as possible and portions adherent to the veins are removed. This method is not a radical cure as collaterals always persist, but it relieves the varicose ulcers, the oedema, and the deformity of the veins remaining. Of twenty-four cases in which partial saphenectomy was done by the author in the period from 1923 to 1931, a cure was obtained in all before the incisions had healed, and the postoperative course was good. However in a few cases recurrences developed later

The author describes his technique for partial saphenectomy in detail. In the period from 1923 to 1931, he performed this operation on thirty-seven men and twenty-five women. From both the surgical and the functional standpoints the results were excellent

Schiass's method of treatment, in which a mixture of metallic iodine, potassium iodide, and distilled water is used as a coagulant has been employed by the author with usually good results, but in a few cases recurrences developed and in one case indurated oedema appeared after a time. Occasionally

this treatment may be followed by acute hæmorrhagic nephritis

Moreschi's method of multiple phlebotomy with multiple circumferential incisions is effective in the cure of varices, especially varices of the leg, whether the latter are located along the course of the saphenous or not. When the varices are in the thigh along the course of the saphenous the addition of phlebotomy at the proximal end of the thigh as proposed by Giordano or multiple phlebotomy is necessary. An underestimated drawback to Moreschi's operation is the postoperative occurrence of secondary indurated oedema. The author believes that this oedema is due to lymph stasis more than to interference with the superficial venous circulation. He has therefore added to Moreschi's operation a part of the technique used in the treatment of elephantiasis to form a new communication between the superficial and deep lymphatics. His modification of Moreschi's operation has the following five steps:

- 1 Circular or elliptical incision of the skin and tissues down to the muscular aponeurosis a few centimeters below the spine of the tibia

- 2 Ligation of bleeding vessels with catgut

- 3 Dissection of the skin upward and downward so as to expose 6 or 7 cm. of the aponeurosis

- 4 Removal of a band of aponeurosis from 4 to 5 cm. wide so as to leave the muscles well exposed

- 5 Suture of the cut edges of the skin with interrupted stitches

After the operation the limb is immobilized for fifteen days. Sometimes this operation is supplemented by other procedures to meet the requirements of the particular case

The results have been excellent. As compared with the scar left by saphenectomy, the cicatrix is almost invisible.

W. H. MARTINEZ, M.D.

Storck, A. H. The Formation of an Arteriovenous Fistula for the Relief of Aortic Aneurism. *La Orleans M & S J*, 1931, lxxxiv, 440

The operation discussed was suggested by Babcock in 1926 for the relief of the symptoms of aortic aneurism. It consists in the formation of an anastomosis between the internal jugular vein and the common carotid artery. The pouring of part of the cerebral arterial blood directly into the venous system reduces the intra aortic pressure and the consequent increase in the velocity of the blood through the aneurism reduces the lateral pressure on the walls of the aorta and the aneurism.

In four cases in which Storck tried the operation there was an immediate mortality of 50 per cent. The two surviving patients lived nine and three months. Both of them were relieved of pain and dyspnoea in spite of the fact that in one the fistula

in six to ten weeks the average period of hospitalization was fifteen weeks and the average period of disability was nine months.

In seven cases of shaft fracture the average period of disability was even and a half months. Special care was required to prevent posterior sagging. In one case open reduction was necessary.

Fractures just above the condyles met metes equal weight of more than 8 lb. In all of the author's four cases of this type a detraction of 3 lb. is necessary to correct mesial bowing.

Of the entire series of twenty-one cases reviewed nine showed no shortening. In two there was shortening of an inch and a half and in two shortening of 1 1/4 inch.

WILLIAM L. M. CLARK, M.D.

Duval J. O. et al. synthesis of the Femoral Disphysi-
by the Anterior Transcortical Route (Osteotomy
the distal physis femoral shaft to the
the screw) P. med. P. 93. 1. 163.

Duval undertakes to show that not only the
of the femoral disphysi the femoral route although
advocated by the majority of surgeons has numerous
indications and in most cases can be replaced
to advantage by the anterior transcortical route. The
latter is much easier and gives a functional result as
good as the latter that that obtained with the use
of the femoral route.

In three cases the Duval procedure stepped
synthesis by the anterior route the functional results

were excellent. In one case the movements of the
limbs are exactly as good as those of the normal leg.
The anterior transcortical route is especially valuable
in cases of fracture of the middle third of the femoral
disphysi.

An incision 15 cm. long is made on the anterior
surface of the thigh so that its midpoint corresponds
exactly as possible to the site of fracture. The limb
is brought into external rotation and the operating table
is inclined so that the knee responds to the vertical border of
the anterior rectus. The internal border of the ante-
rior rectus is therefore the chief landmark.

The skin and fascia lata are incised along the inter-
ior border of the rectus femoris muscle exposed
freely from the vastus medialis and the distal
ally. The vastus medialis muscle is then cut
longitudinally and the femoral shaft exposed. The approach
to the fracture is rapid and the time required for
the quadriceps muscle insignificant. Closure is
simple. A few stitches in the distal extremity of
the leg and a few in the distal extremity of the
leg.

Hemorrhage is easily stopped. The operation can be
done without ligatures. The site of the fracture is
very well exposed. Penetration of the muscles by
the upper fragment can be easily remedied. The
time is simply by separating the muscle mass. The
reduction of the distal placement is especially easy.
Two bone hold forceps are useful in case of a
refractory alignment of the shaft. The author
reduces the form of an osteosynthesis by the trans-
cortical route in half an hour. P. 12.

However, as has been demonstrated by Allen and others, there seems to be an associated vasoconstriction of the non affected vessels carrying on the collateral circulation. Interruption of the sympathetic nerve supply abolishes not only the element of spasm, but also all of the vasoconstricting influence of the sympathetics. As the spastic condition is more marked in thrombo-angitis obliterans than in arteriosclerosis, the former condition is more amenable to this type of surgery.

Brown has devised a test to determine the presence of the spastic element and has established an arbitrary vasomotor index to serve as a diagnostic and prognostic sign. The test has been modified to give a more definite idea of the results to be expected following complete suppression of the vasoconstricting action. For certain doubtful cases in which the lower extremities are involved the author advises spinal anesthesia.

Gonzales-Aguilar has studied all of the ganglia removed from his cases of Raynaud's disease, Buerger's disease, arteriosclerosis, and chronic arthritis and normal ganglia obtained from cadavers. The former he has examined especially for ganglion cell changes. His results have been negative. He believes that lymphocytes may group around degenerating cells, and that if sclerosis of ganglia occurs, as claimed by Sanchez Perpiña, surgery on the sympathetic would be contra-indicated for it would be attempting to do what the organism has already accomplished. In his opinion, the primary lesions in conditions such as Raynaud's disease and scleroderma are to be found in the ganglion cells or the sympathetic centers of the brain and spinal cord. They may be organic or functional, and due to hormonal or toxic influences.

In Raynaud's disease the author performs sympathectomy in the advanced cases with ulcers and trophic disturbances and in the intermediate stages of painful crises. He believes that in all cases of thrombo-angitis obliterans temperature studies and sympathetic block are indicated to determine the prognosis. He limits the operation to cases with pain, claudication, and heat and color changes. For cases with localized ulcers or bone necrosis he advises that the sympathectomy be done before or simultaneously with the treatment of these lesions as it favors cicatrization. If gangrene is marked, he performs an amputation.

In arteriosclerosis, sympathetic ganglionectomy is seldom indicated. The author tried it on only two of fifty patients. Both were relatively young, one being fifty-eight and the other twenty-four years of age. The latter had a calorimetric index of 0.32 (Brown). Double amputation was contra-indicated by his poor general condition. A year after the sympathectomy he still showed great improvement.

The author reports eight cases in which sympathetic ganglionectomy was performed. He does not give the diagnosis as he believes that some of the cases presented mixed lesions.

V. H. MARTINEZ, M.D.

Delater, G. Dystrophies of the Skin in Diseases of the Veins. *Oedemas* (Les dystrophies tegumentaires dans les maladies des veines. Les oedemes) *Presse med*, Par, 1931, **XXXIX**, 1690.

Oedema of cellular tissues is a manifestation of a disturbance of the water exchange between the tissue spaces and the capillaries. The capillary walls are permeable to crystalloids and water, but impermeable to proteins. The normal water balance depends upon an equilibrium between the hydrostatic pressure within the blood vessels and the pressure due to the avidity of proteins for water. Other factors, such as the albumin-globulin ratio and the cholesterol-fatty acid ratio may also influence the water exchange but since disturbances in these ratios usually occur only in the presence of advanced kidney or liver damage, they are not important in the etiology of oedema due to varicosity or phlebitis.

Marked changes in the vein walls permit the escape of protein substances from the vessels. Once outside the membrane, these substances exert their hydrophilic pressure in preventing the return of water from the tissue spaces. A study of the protein content of oedema fluids due to varicosity revealed values of from 4 to 6 mgm per liter whereas oedemas from passive congestion never yielded more than 3 mgm.

Some varicose veins show perivenous infiltrations which may appear inflammatory and are frequently associated with trophic, eczematous, or ulcerative disturbances. Histological study reveals dilatation of the vasa vasorum of the involved segments. The author ascribes this to a reflex arising from the thickened vein wall which leads to disturbances in permeability and the escape of fluid and protein bodies in the vicinity of the diseased vessel. A reactive fibrosis or arterial hyperthermia of vasomotor origin and various trophic, eczematous, pigmentary, fibrotic, and ulcerative changes may occur in the pachydermatous areas.

In other cases oedema of the ankles occurs which is out of proportion to the degree of venous insufficiency. The author attributes this oedema to a change in the chemistry of the crystalloids and assumes a diminution in calcium which may in turn be evidence of hypoparathyroidism. He suggests the administration of calcium and parathyroid extract in the treatment of lesions of this type.

LLO M. ZIMMERMAN, M.D.

Lenormant, C., and Mondor, H. Thrombophlebitis Supposedly Produced by Effort (Sur la prétendue thrombo phlebite par effort) *Presse med*, Par, 1931, **XXXIX**, 1669.

The spontaneous occurrence of thrombophlebitis in persons in normal health is frequently attributed by the patients to traumatism or effort. The surgical literature contains the reports of about twenty cases of phlebitis of this type involving the upper extremity. In most of the cases the condition occurred in the right arm. Involvement of veins elsewhere than

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cases reviewed the most frequent hæmorrhages occurred from the nose, the gums, the skin, and the genital organs. In a few instances bleeding occurred also from the gastro intestinal tract and the urinary organs. Hæmarthrosis developed in only one case. Six of the females died from hæmorrhage.

In some of the patients a slight secondary anæmia was demonstrable. Quite often a striking neutropæmia and a relative lymphocytosis were found, and occasionally also there was a considerable eosinophilia. The blood platelet count varied considerably, but as a rule was within normal limits. The lowest values were found in the most severe cases. The blood platelets showed no striking qualitative changes. The bleeding time was markedly prolonged, but the coagulation time was normal. The retraction of the coagulum was quite normal. The Rumpel-Leede stasis test was positive.

The cases could not be classified with the recognized group of hæmorrhagic diatheses. Both clinically and hæmatologically, they closely resembled some of the previously mentioned cases, especially those reported from America. All of these cases constitute a special group with a fairly uniform disease picture. In a non-hereditary case closely resembling these cases which was described by Morawitz and Juergens a true thrombopæmia was demonstrated.

The pathogenesis of the hæmorrhages can be explained most easily by the assumption of a functional disturbance of the thrombocytes. Possibly also there is a lesion of the vascular walls.

In the treatment, dietetic measures, vitamin therapy, the use of calcium phosphate and arsenicals (Fowler's solution), roentgenotherapy of the spleen, and direct blood transfusion have been tried.

LOUIS NEUWELT, M.D.

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25 per cent. In 224 cases of biliary surgery there was a mortality of 6.3 per cent (14 deaths), and in renal and ureteral surgery, a mortality of 9.2 per cent. In 55 cases of trephination there was a mortality of 30.8 per cent (17 deaths), in 106 cases of brain surgery, a mortality of 33 per cent (34 deaths), and in 714 cases of thyroid surgery, a mortality of 2.2 per cent (16 deaths).

The fatalities were caused by (1) operative shock, circulatory failure, (2) postoperative pneumonia, (3) embolic complications, (4) postoperative infections, (5) hæmorrhage, (6) functional collapse of the vital organs, (7) miscellaneous postoperative complications, and (8) the original disease for which the patient was operated upon. Eleven deaths occurred on the operating table. Two deaths resulted from infections caused by contamination, and 9 from massive postoperative hæmorrhage.

E. GLASS (Z)

ANTISEPTIC SURGERY, TREATMENT OF WOUNDS AND INFECTIONS

Goljanicki, I. The Integral Treatment of Infected Wounds (Zur Frage ueber die integrale Therapie infizierter Wunden) *No. chir.*, 1930, 7, 114

By the term "integral treatment" the author means treatment of the organism as a whole. This is based on the belief that suppurative processes and wound infections are associated with demineralization, particularly a lack of sufficient calcium, and an avitaminosis.

Goljanicki prescribes the administration of bone ash by mouth and of calcium by mouth and by intravenous injection. His anæmic patients receive also subcutaneous injections of from 5 to 10 c. cm. of hemolyzed blood. Weak patients receive periodically the warm blood of a freshly killed hen to drink. This is given in quantities of from 100 to 150 c. cm. with milk. Vitamins are provided in the form of fresh milk, turnips, carrot juice, fresh cabbage juice, lettuce, and bilberries. The vitamins are activated by ultraviolet irradiation. In addition, the entire diet is regulated.

Favorable results have been obtained with this regime in suppurative pleurisy, tuberculosis of bones and joints with sinuses and malnutrition, chronic gynecological diseases (salpingitis, endometritis, and perimetritis), chronic osteomyelitis, and septic states with suppurating wounds.

SCHAAK (Z)

Muntsch. The Sterilization of Powders, Especially Dusting Powders for Wounds (Zur Sterilisierung von Pulvern, insbesondere Wundstreupulvern) *Deutsche Ztschr. f. Chir.*, 1931, CCXXXII, 531

The author has made bacteriological studies of the powders used in surgical practice for mechanical purposes (glove powder) and for therapeutic purposes (dusting powder for wounds). While it is generally agreed that talcum used for surgical purposes must be rendered free from bacteria, scientific testing of the methods by which it is sterilized, especially

measurement of the penetration of heat into the powder during the sterilizing process, has heretofore not been done or has been done only very insufficiently. Therefore it has been impossible to be certain that in a case of infection the talcum powder used was not responsible for the condition. In powders applied to wounds, especially those containing bolus alba, freedom from bacteria is especially important because of the great danger of tetanus infection. It was formerly believed that if chemicals the majority of which had an antiseptic action were added to such wound powders, this was absolutely sufficient, a special sterilization being effected.

In very careful investigations the author found that bouillon tubes inoculated with solutions of yatren powder showed no bacterial growth during an observation period of six days. Except in one or two cases, the findings were similar in experiments with xeroform and tannoform powder, but the ordinary dusting powders for wounds, such as rivanol, dermatol, and sulfox powder, talcum, and "sterilized" bolus alba showed bacterial growth in all cases, sometimes even after twelve hours. None of the drugs tested could prevent bacterial growth when they were added to cultures (spore-containing garden soil).

The bacteria cultured from these dusting powders were then further examined in subcultures on slanting agar plates. Yatren, xeroform, and tannoform yielded no growth, but all of the other powders, including "sterilized" bolus alba, yielded bacilli. In experiments in which solid nutrient media were inoculated with suspensions of the powders in sodium chloride solution, yatren again showed no growth. The poorest results were obtained with talcum.

In this way it was demonstrated with certainty that almost all of the dusting powders contain a greater or less number of bacteria, even those designated commercially as "sterile." Accordingly, before dusting powders for wounds are used, they must be rendered sterile. The sterilization may be effected by dry hot air or by streaming steam under pressure. The use of dry heat at 150 degrees for half an hour and the use of steam pressure at 120 degrees for ten minutes assures sterility.

The author next carried out investigations to determine how long the dry or moist heat at the temperatures mentioned requires to penetrate all parts of the powder, as the true sterilization period of thirty and ten minutes respectively begins only after such penetration has been attained. He studied the temperature within the powder boxes with thermo elements such as those used by Konrich in investigations on the sterilization of bandage material. He found that a dry heat of 150 degrees reached all parts of the boxes filled with the powder in a period of fifty minutes, whereas in an open space of the hot air chamber a heat of 150 degrees was reached in twenty minutes. This finding shows how little the inner temperature recorded by the thermometer corresponds to the temperature of the inner space of the chamber, and that this must be determined by

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE POSTOPERATIVE TREATMENT

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The treatment seems powerless to cure tuberculous meningitis. Of twelve cases of this condition in which it was used, death resulted in ten.

The author reports ten cases of different types of surgical tuberculous lesions treated by his method of bacteriotherapy.

In the discussion of this report LEGUET said that he had tried the treatment on some of his patients suffering from genito-urinary tuberculosis. While there was great improvement, he could not say that any cures had been obtained. However, he believes the method is of value in cases which cannot be treated otherwise.

SOREL said that at Berck the treatment has been used with unfavorable results in fourteen cases of bone or bone and joint tuberculosis. Twelve of the patients were children.

Others entering the discussion stated that they had obtained indifferent results, but were willing to withhold final judgment until a greater number of patients had been treated and followed for a number of years.

KELLOGG SPEED, M D

ANÆSTHESIA

Provenzano, D. The Influence of Various Types of Anæsthesia on the Alkali Reserve of the Blood (Influencia de los diversos tipos de anestesia sobre la reserva alcalina de la sangre) *Bol inst de clin quir*, 1931, VII 321

Provenzano draws the following conclusions:

1 The acid-base equilibrium of the organism should be determined before and after all major surgical operations.

2 This is done most accurately by determining the hydrogen ion concentration and the alkali reserve of the blood by the methods of Cullen and Van Slyke and Cullen, which indicate quantitatively the degree of deviation toward acidosis or alkalosis.

3 The determination of the hydrogen-ion concentration of the blood is of little interest to the clinician because the variations in this concentration are slight and, appearing late, do not reveal the first degrees of acidosis or alkalosis.

4 The most practical procedure for the clinician is the determination of the alkali reserve, which will demonstrate the presence and degree of an acidosis or alkalosis.

5 The indirect or functional methods, such as determinations of the alveolar carbon dioxide and urinalysis, give merely approximate values and are of value only to confirm the findings of the determination of the alkali reserve.

6 In surgery it is essential to know, in addition to the alkali reserve, the content of chlorides and urea in the blood and the acidity, the organic acid index of Van Slyke and Palmer and the ammonia content of the urine.

7 An exact knowledge of the acid base ratio will enable the surgeon to judge the type of anæsthetic that may be used with minimal risk of complications due to acidosis or alkalosis.

8 General anæsthesia induced with ether produces a marked decrease in the alkali reserve. Spinal anæsthesia has the same effect to a less degree.

9 Local and regional anæsthesia do not produce an appreciable change in the acid-base balance.

10 The principal cause of the decrease in the alkali reserve resulting from general or spinal anæsthesia is probably the hypotension of the blood produced by these types of anæsthesia which causes a concentration of hæmoglobin in the blood with retention of alkali in the tissues and a corresponding decrease of alkali in the blood.

11 The administration of carbon dioxide by the method of Henderson during general anæsthesia and after operation will greatly reduce the fall in the alkali reserve and prevent anæsthetic syncope by its stimulating and regulating action on the respiratory centers.

12 The postoperative states of acidosis and alkalosis can be easily diagnosed by the study of the alkali reserve and the supplementary measures cited, and can be combated successfully by treatment appropriate to the particular case.

FRANCIS M CONWAY, M D

Giordanengo, M G. Segmental Peridural Anæsthesia (Anesthésie peridurale segmentaire) *Bull et mêm Soc d chirurgiens de Par*, 1931, XXXI, 501

Peridural or extradural anæsthesia is obtained by injecting an anæsthetic into the peridural space between the dura mater and the osteoligamentous canal of the spine as worked out by Dogliotti. The anæsthesia may be induced in any desired area of the spine as the action of the injected fluid is limited to the spinal roots that are bathed by the anæsthetic and the extension of the anæsthesia is almost mathematically proportional to the amount of fluid introduced. Peridural anæsthesia differs from ordinary spinal anæsthesia in that the anæsthetic is injected outside of the dura mater, and differs from paravertebral anæsthesia in that one puncture is sufficient, the nerve trunks being reached before they make their exit from the spinal canal.

The anæsthetic is a freshly prepared 1 per cent solution of novocain in normal salt solution, each 50 or 60 c cm of which contains from 7 to 10 drops of a 1:1,000 solution of adrenalin. The injection is made with a strong short-pointed spinal needle attached to a syringe with a capacity of from 10 to 20 c cm. The patient may sit or lie. At the point where the needle is to be introduced the dura must be free from marked tension. Accordingly, the sitting position is best for anæsthesia above the first lumbar vertebra and the lying position for anæsthesia below that level.

As the fluid spreads downward somewhat the point of injection must be at the summit of the exit from the dura of the nerve controlling the operative area. For operations on the stomach, liver, and subdiaphragmatic organs the injection is made between the eleventh dorsal and second lumbar vertebra, and for operations on areas below the level of the umbili-

PHYSICO-CHEMICAL METHODS IN SURGERY

RADIUM

Wavneord, W V The Measurement in R Units of the Gamma Rays from Radium *Brit J Radiol*, 1931, 14, 693

Preliminary results are given of a series of experiments which are intended to put on a more quantitative scale the distribution of gamma-ray intensity in the vicinity of radium applicators.

The unit dose which is chosen as a basis for the experimentation is the R unit which is used in X-ray therapy. This unit is determined by ionization measurements, the instrument being a small ionization chamber having a volume of approximately 21 cm. The saturation current is 35 volts and the difference in potential is 0.1 volts.

Four types of checks were made to determine the comparative value of the measuring instrument. The mean value was accepted to be 11.1 R for ten divisions of the iontoquantimeter. The accuracy was not thought to be better than 3 per cent.

The ionization chamber was then checked against the beam of X-rays that was used for calibrating the measuring chamber. The results indicated that the ionization chamber and the Wilson measuring chamber ran parallel to each other, thus permitting an assumption of accuracy in the readings.

A series of readings was carried out in air on a 5.12 mgm radium needle 27 mm long with 0.5 mm of platinum and an active length of 15 mm. The results are shown in a graph in which R/mgm-hr is plotted against distance. The isodose curves are also shown around the needle.

The author then approaches the problem from a theoretical standpoint. It is shown that there is quite a reasonable agreement between the calculated and actual values. A result in good agreement is about 2.2 R/mgm-hr at a distance of 2 cm and screened with 0.5 mm of platinum. Excellent agreement was found also in the theoretical and observed relation between the International R and the Solomon R, in which 1 R/sec = 1.65 R.

Various unit skin doses are given. Glasser's value for gamma rays is 2,000 R. At the Cancer Hospital, London, the value is 1,800 R when 1 gm of radium is used at a distance of 7 cm and with 1.0 mm of platinum. At the Memorial Hospital the dose is equivalent to 1,400 R when a screen of 0.3 mm of aluminum is used. The Mallet D unit is also shown to be in good agreement, 2,000 R being equivalent to 17.1 D. Mallet gives 17 D and Sluys gives 18 D as a unit skin dose.

The decision is that the skin erythema dose for gamma rays is about 2,000 R when the intensity is of the order of 1 R per minute.

A JAMES LARKIN M D

Pilcher, R S Radium and Pain. An Investigation of Certain Results of Radiotherapy in Cases Treated at University College Hospital, London. *Lancet*, 1931, CCXXI, 1175.

This is a detailed analysis, from the standpoint of pain and its relation to radium treatment of forty-nine cases of cancer treated at the University College Hospital, London. The variation in tissue sensitivity in different patients made the study difficult. The dose of irradiation which was ideal in some cases caused necrosis and pain in another. The patients were classified as follows:

Group 1, twenty-one patients whose pain was not relieved by treatment; Group 2, twelve patients whose pain was relieved by treatment; and Group 3, sixteen patients who had pain after but not before treatment.

Pilcher concludes that radium treatment will relieve deep and referred pain due to malignant disease. This result may even be achieved by repeated treatment if the total dose is not too large.

Gross overdosage, which causes radium necrosis, and the placing of radium needles in close proximity to a nerve plexus may increase pain. These two causes accounted for the pain in five cases in Group 3. In the remaining cases in this group the pain was due to the progress of the disease.

C D HAAGENSEN, M D

MISCELLANEOUS

Maver, E The Present Status of Light Therapy. Scientific and Practical Aspects. *J Am M Ass*, 1932, CCVIII, 221.

Although there is much information regarding the results of irradiation of man and animals, the process by which these results are obtained is as yet unexplained. Moreover, a great need exists for data obtained from definite dosage, intensity, and wave lengths in normal and abnormal organisms. There is much disagreement between practical and therapeutic results and scientific and experimental observations.

The author reviews the scientific work that has been done and discusses the sources of light and the physical properties and penetrability of varying wave lengths. He states that the biological and physiological effects of light on the cells of the body tissues have been studied by many, but without definite conclusions except with regard to ultraviolet light. Ultraviolet light produces a substance resembling Vitamin D, exerts a favorable effect on calcium metabolism and has a bactericidal action on certain strains of bacteria.

While the action of light on the body is probably exerted indirectly by way of the cutaneous cells

cus it is made between the first and fourth lumbar vertebrae

The needle is introduced in the midline and forced in until it meets the resistance of the yellow ligaments. In attempt to inject some of the fluid at this point will fail because the ligaments lie behind the needle. The needle is then pressed lightly farther pressure being made simultaneously on the plunger of the syringe. When the liquid collects easily the epidural space has been reached. This is proved by failure of the cerebrospinal fluid to run out when the syringe is detached. Air bubbles are avoided and only from 0 to 2 c.c. of the fluid are injected into the epidural space.

Further proof that the needle is rightly placed is the absence of tingling and beginning anesthesia in the leg after three or four minutes. At the end of that time the remainder of the fluid to be used is injected. Light pressure being employed to facilitate its diffusion.

The induction of complete anesthesia requires from fifteen to twenty minutes. If lateral incision is to be made the anesthesia is deepened at the proposed site by turning the patient onto that side.

The pulse may be accelerated and the blood pressure lowered but the latter should not fall more than 3 or 4 mm. Hg.

The author cites the reasons why this type of anesthesia is superior to ordinary spinal and paravertebral anesthesia. KELLOGG SMITH, M.D.

DAVIS, E. Sacral Block Anesthesia in Perineal Prostatectomy. Its Effectibility When Accurately Administered. J. Am. Med. Ass. 93, 77.

Davis concludes that sacral anesthesia is the anesthesia of choice for perineal prostatectomy because it is uniformly and dependably accurate. It is induced by the correct technique with the needles unquestionably in the foramen. It is applicable to every case in which prostatectomy is done. It is attended with no hazard if precautions are taken not to puncture the dural sac or blood vessels. Induction requires on an average only twelve and a half minutes and it was a factor of importance in maintaining the low mortality rate of 2.35 per cent in 375 consecutive perineal prostatectomies. F. S. M. JR., M.D.

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

Taussig, A. E., and Schnoebelen, P. C. The Roentgen Treatment of Agranulocytosis *J Am M Ass*, 1931, **xcvii**, 1757

The authors report four cases of agranulocytosis treated with small doses of roentgen irradiation. Two patients have apparently completely recovered, but two died.

Cases of agranulocytosis have been observed with such increasing frequency that the disease may no longer be considered rare. Until recently, the number reported has not been sufficiently large to justify statistical methods.

Excluding all cases in which the condition may have been caused by bone-marrow depression such as occurs in benzene poisoning and all cases in which it was found after anti-syphilitic treatment or during the aleukæmic stage of lymphatic leukæmia, the authors were able to collect 334 well-authenticated cases of agranulocytosis. In the tabulation of the results of therapeutic measures, those in which treatment was instituted after the disease was so far advanced that benefit could not be expected were omitted. The results are shown in the following table.

RESULTS OF THERAPEUTIC MEASURES

	Cases	Deaths	Mortality Percent
Cases treated by irradiation	64	34	53
Cases treated by transfusion	53	34	64
Cases treated with arsphenamine	33	24	73
Cases treated by other therapeutic measures	178	133	75

The authors conclude that of the various methods of treatment, the most promising seems to be irradiation of the long bones with mild doses of the X-rays. Transfusions are also apparently beneficial.

CHARLES H. HEVCOCK, M.D.

Loewy, G. Complete Derivation of the Bile Outside the Digestive Tract. Hypertrophy of the Parathyroids. Osteomalacia (Dérivation totale de la bile hors du tube digestif. Hypertrophie des parathyroïdes. Osteomalacie) *Presse med*, Paris, 1931, **xxix**, 1627.

In an experiment on a dog the author found an osteomalacia with general hypertrophy of the parathyroids after total derivation of the bile outside of the digestive tract for fifteen months. During this time the appetite was maintained and nutrition was normal as judged from appearances and the health and activity of the animal. The only abnormal phenomenon was intestinal hemorrhage which recurred several times.

Necropsy showed important changes in the duodenal mucosa but no duodenal ulcer. The ileal mucosa was the site of an intense vascular congestion which produced hemorrhages by diapedesis. There was no chronic nephritis. The skeleton showed a progressive osteomalacia. The parathyroids were regularly hypertrophied by considerable hyperplasia of the glandular elements without an inflammatory reaction.

Analyses of the blood during the experiment showed that the calcium content of the serum remained almost constant although the dog was fed foods poor in calcium, viz. meat and potatoes. This may be explained partly by the fact that the gall bladder was preserved. The absorption of the calcium of the bile by the normal gall bladder would explain the relatively low calcium content of the bile of the common duct when the gall bladder is preserved. Moreover, the epiphyses of the bones act as a reservoir which restores calcium to the blood serum, while the calcium loss in the bile is insignificant.

During the fifteen months of the experiment the average quantity of bile excreted was 150 c cm per day, or 67½ liters. If we assume 20 mgm of calcium per 100 c cm or 200 mgm per liter, the total elimination of calcium in 67½ liters was 1350 gm—a quantity disproportionate to the loss of calcium undergone by the skeleton. As Mandl succeeded in curing the osseous disease by removing a parathyroid tumor, there can be no doubt that a localized hypertrophy, adenoma of the parathyroids, has been the cause of skeletal disturbances in certain cases.

The author attributes the hyperplasia of the parathyroids to the fact that the parathyroids are the most sensitive to ionic disequilibrium of calcium of all body tissues. The exaggerated secretion of the hyperplastic parathyroids is equivalent to an experimental injection of parathyroid hormone which determines the mobilization of the calcium in reserve in the epiphyses, the demineralization of the bones, and the osteomalacia. This process takes place without intervention of the osteoclasts. PAGE

Kitahara, S. Studies on the Exhaustion of Skeletal Muscles (Studien ueber die Ermuedung der Skelettmuskeln) *Keijo J Med*, 1931, **ii**, 171.

From his very extensive studies the author draws the following conclusions:

1. A pharmacologic active substance is produced by the contraction of skeletal muscles. This substance which may be called a "work hormone," stimulates the heart and dilates the blood vessels. As a result of its cardiovascular effect the work of muscle is favored.

2. The contraction of skeletal muscle and its exhaustion always depend upon the hydrogen ion

nervous and blood vessels it is difficult to apply the findings of islat experiments on single cells bacteria and the components of cellular structure to the effects on the human body.

In discussing the production of pigment Mavr says that without doubt there is some correlation between pigment and increased tolerance to irradiation.

The dosage of light therapy must vary according to the success of the light and the person and the diseases treated. The author believes that exposure to wavelengths of light in association with irradiation.

Recently he has been employing the subcutaneous dosage with results apparently favorable as those obtained with the larger dose formerly used. Overdosage may cause injury.

Extensive claims have been made with regard to the therapeutic value of ultraviolet irradiation in a long list of diseases. Mavr states that in tuberculosis no form of light therapy is curative

by itself. Rest and hygienic and dietetic measures are necessary in addition. In some cases orthopedic surgery is indicated. In the use of mercury vapor quartz light Mavr has obtained the most favorable results in cases of intestinal tuberculosis. He does not consider pulmonary tuberculosis an indication for light therapy. Results in skin diseases respond favorably but the value of light therapy in anemia has not yet been established.

In conclusion the author says: From the foregoing presentation of the present status of light therapy it is evident that light may be done both judiciously and unjudiciously. Of light therapy as the method has proved itself to be a limited number of diseases it is surely clear that much more investigation and many more case studies are required before light should be generally prescribed by those unfamiliar with the contraindications and the details of its application.

GEORGE B. B. MD

is possible without tubercles and without the presence of acid-fast bacilli. In cultures, the virus may retain its capacity for reproduction for as long as three years and five months. It may be transmitted to the fetus by intra-uterine contagion. The author describes experiments on guinea pigs in which the disease was transmitted from generation to generation, but no acid-fast bacilli were demonstrated. He has noted that there are different forms of tuberculosis corresponding to the different phases in the evolutionary cycle of the virus.

AUDREY GOSS MORGAN, M.D.

SURGICAL PATHOLOGY AND DIAGNOSIS

McDonald, S, Jr. Leucocyte Counts in Surgical Prognosis. *Edinburgh M J*, 1931, XXXIII, 657.

From his studies the author draws the following conclusions:

1 The total leucocyte count by itself is of relatively little value in the prognosis of acute pyogenic infections.

2 Differential leucocyte counts which do not include an estimation of the shift to the left of the neutrophils give little information in such cases.

3 Among the methods in which the shift to the left is taken into consideration the Schilling hæmogram is the most practicable for clinical use and gives valuable information as to the resistance of the patient.

4 Methods in which the total and differential leucocyte counts are combined to determine an "index of resistance" are fallacious because of the variability of the total leucocyte count.

5 The recognition of postinfective eosinophilia is of the greatest importance in the prognosis of acute pyogenic infections.

SAMUEL KAEN, M.D.

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SURGERY OF THE CHEST

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SURGERY OF THE ABDOMEN

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SURGERY OF BLOOD AND LYMPH SYSTEMS

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PHYSICO-CHEMICAL METHODS IN SURGERY

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INTERNATIONAL ABSTRACT OF SURGERY

MAY, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

HEAD

Furstenberg, A C Osteomyelitis of the Skull
The Osteogenetic Processes in the Repair of
Cranial Defects *Ann Otol, Rhinol & Laryngol*,
1931, xl, 996

The author calls attention to the frequent occurrence of cranial osteomyelitis following operations on the nasal accessory sinuses. While the infection probably extends most commonly by continuity of tissue, in some cases it spreads between dura and bone, eroding the latter by pressure or infecting it through a thrombophlebitis of the intracranial diploic veins.

In the treatment, radical removal of the full thickness of all diseased bone is necessary. In severe cases the operation should be performed in two or three stages. There need be no apprehension in the radical removal of large portions of the cranial vault as complete regeneration of the bone often occurs. Plastic procedures for the obliteration of cavities in the skull by the use of free transplants of bone are seldom indicated. Any tissue of a fibrous connective tissue type in the region of a cranial defect may participate in regeneration of the bone.

JOHN J MALONEY M.D.

Potts, J B Thrombosis of the Lateral Sinus
J Am M Ass 1932, xcvi, 379

In mastoid infection a sudden high temperature of from 103 to 105 degrees F which drops as suddenly to nearly normal with or without a chill and a coincident rapid leucocytosis and reduction in the hemoglobin indicate immediate radical exposure of the diseased appearing lateral sinus until normal sinus wall is uncovered at both ends. Regardless of whether or not the sinus bleeds freely and is patent the distal and proximal ends should be blocked in the usual manner and the sinus groove gently and firmly packed with iodoform gauze so as to obliterate the lumen from plug to plug and thus leave the sinus empty.

This procedure should be carried out early, before the usual signs of jugular thrombosis and metastatic infection develop. The author believes it tends to localize the infection and thus to reduce the mortality, render the course of the condition milder, and favor rapid convalescence. He advocates leaving the wound wide open and applying continuous moist dressings.

In conclusion Potts reports his experience in sixty-three cases, in fifty-three of which the jugular vein was tied. Fifty-four of the patients recovered and nine died. In all of the fatal cases the jugular vein was tied.

HAROLD M BRILL M.D.

Rogers, L, Hall, T, and Shackelford, J H Fractures and Incomplete Dislocations of the Mandible or Maxilla *Radiology*, 1932, xviii, 28

During 1928, 1929, and 1930, the authors treated 1,170 cases of fracture of the jaws.

They have found that many fractures of the jaw, especially fractures in the condyle region and fractures of the edentulous maxilla, are overlooked.

In the authors' clinic at the Receiving Hospital, Detroit, all patients with head injuries are subjected to an X-ray examination for jaw fracture. In many cases a postero-anterior roentgenogram is made to determine whether a fracture is present in the condyle region. Right-angle and left-angle roentgenograms of the jaws are always taken. If any doubt then remains, the roentgenologist orders a digital examination in the oral surgery department, regardless of whether the patient is in the hospital or in the out-patient department.

The general management of fractures of the jaw includes (1) diagnosis from the findings of roentgen, general physical, and oral examinations, (2) reduction of the fracture or fractures and possible manipulation for fracture at the head at the condyle or where there is overlapping of the fragments, (3) fixation of the parts by splints (silver wire open reduction), interdental wiring, or Barton casts, (4) postoperative treatment, and (5) the use, in some

BIBLIOGRAPHY

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eyelids, those of the conjunctiva, and those of the eye socket. Swelling and redness in the region of the lachrymal sac and a subsequent fistula are frequent signs, but may lead to an incorrect diagnosis. The conjunctivitis, like the swelling of the eyelids, is usually part of the oedema. Occasionally exophthalmos has been observed.

In the differential diagnosis it is necessary to rule out ophthalmia neonatorum, erysipelas, dacryocystitis, syphilis, and tuberculosis.

The treatment recommended by the author includes careful cleansing of the mouth, conservative treatment of the nasal and orbital manifestations, and incision and drainage of areas of fluctuation from the interior of the mouth and through the nasal cavities if possible. Abscesses connected with the lower jaw should be treated according to ordinary surgical principles.

C G SHEARON, M D

EYE

Gifford, S R. The Mild Form of Epithelial Dystrophy of the Cornea. *Arch Ophthalmol*, 1932, vii, 18.

The mild form of epithelial dystrophy of the cornea is characterized by the presence of oedema of the epithelium, numerous minute staining areas, reduced corneal sensitivity, and, as a rule, a low intra ocular tension.

It is not an uncommon condition and would undoubtedly be recognized more frequently if every patient complaining of a burning and scratching sensation with a slight reduction of vision were examined with the slit lamp after staining with fluorescein.

The use of ethyl-morphine hydrochloride or phenacain or both seems to exert a definitely favorable effect on the condition.

Gifford gives a rather detailed summary of the findings in twenty-three cases and describes the treatment used by himself and others.

LESLIE L MCCOY, M D

Peter, L C. Dystrophy of the Corneal Endothelium. Its Recognition and Clinical Significance. *Arch Ophthalmol*, 1931, vi, 817.

Dystrophy of the corneal endothelium is rather common. The author saw twenty-two cases in routine practice in a period of eighteen months. The condition is easily recognized with the slit lamp. It is permanent, bilateral, and progressive.

The dystrophy begins in the center of the cornea and progresses toward the periphery. It is manifested early by fine bluish of a golden hue on Descemet's membrane. Associated pathological conditions in the cases reviewed were incipient senile and nuclear cataract, toxic central choroiditis, low grade uveitis, and advanced generalized arteriosclerosis. The average age of the twenty-two patients was sixty-one years. The youngest patient was forty-one years. In one case operated upon for cataract the healing was prolonged and complicated.

THOMAS D ALLEN, M D

Samojlov, A. The Importance of the Focal Reaction of the Eye in the Diagnosis and Specific Treatment of Tuberculous Choroiditis. (Bedeutung der Herdreaktion des Auges bei Diagnostik und spezifischer Therapie der tuberkulösen Chorioiritiden). *Russk oftalmol Ztschr*, 1931, viii, 471.

A number of authors have advised against the use of tuberculin in tuberculous choroiditis because of the possibility of exacerbations (haemorrhages). Samojlov, on the contrary, believes this treatment to be very suitable provided it is possible to prove the specificity of the process or the diagnosis and to determine the threshold of sensitiveness of the choroidal focus to tuberculin.

He believed it might be possible, by exact and daily inspection of the choroidal focus with the ophthalmoscope before and during the tuberculin treatment to observe changes in the focus, in themselves unimportant, which would indicate the approach to its threshold and thus protect against harmful doses of tuberculin. He therefore made such systematic examinations in five cases of tuberculous choroiditis which he treated specifically with excellent results during the past year.

He now reports that in all cases a characteristic and peculiar reaction occurred in the choroidal focus even when minimal doses (from 0.2 ccm of a 1:10,000,000 solution to 0.1 ccm of a 1:1,000,000 solution) were used. Pigment granules usually appeared in the center of the previously unpigmented focus or pigment migrated out of the pigmented foci. If the treatment was continued with increased doses, a diffuse hyperemia of the fundus oculi occurred in the immediate vicinity of the choroidal focus. This was a distinct sign of focal reaction leading to haemorrhage.

Accordingly, Samojlov now treats all cases of tuberculous choroiditis with intracutaneous injections under careful and systematic daily inspection of the fundus with the ophthalmoscope. He begins with a dose of 0.2 ccm of a 1:10,000,000 solution and then increases the amount until the first signs of a focal reaction are seen. During this period, which he regards as diagnostic, the tuberculin doses are increased according to rule. Then he proceeds to the second, or truly therapeutic, period. During the latter the tuberculin doses are strictly individualized on the basis of the character of the reactions observed in the first period and the general activity, localization and peculiarities of the process. However the most important factor in individual tuberculin therapy is the exact, uninterrupted ophthalmoscopic examination of the choroid focus.

A E GOLDFEDEL (O)

O'Brien, C S. The Cataract of Postoperative Tetany, with a Report of Three Cases. *Arch Ophthalmol*, 1932, vii, 71.

Rapidly developing cataract as a complication of postoperative tetany has been recognized for many years. To forty-two cases reported in the literature, O'Brien adds three of his own.

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findings of a cytological examination of the washings. Rhinoscopic examination shows pus either anteriorly between the middle turbinate and septum or posteriorly in the nasopharynx. In the roentgenographic examination the author uses the Granger and Hirtz positions supplemented by the positions of Rhese and Scheier, and employs radiopaque substances. Exploration or irrigation of the sinus is a diagnostic aid.

In the prophylactic treatment, attention must be paid to local or nasopharyngeal conditions and to the general health. Symptomatic treatment consists in relief of the pain by the use of anodynes, cocaine of the sphenopalatine nerve, or injection of the nasal ganglion. In local treatment the objective is the re-establishment of drainage and ventilation. For this purpose shrinking solutions are indicated. Lavage or irrigation is of great therapeutic value. Besredka antiviral was used successfully by the author in eight cases. Six were treated by instillation and two by the Proetz displacement method. GEORGE R. McAULIFF, M.D.

PHARYNX

Schultz, W. Progress in the Acute Anginas—Agranulocytosis, Lymphoid-Cell Angina (Fort-schritte auf dem Gebiet der akuten Halserkrankungen—Agranulocytose, lymphoidzellige Angina) *Ztschr. f. Laryngol., Rhinol.*, 1931, xxi, 367.

The organic basis of agranulocytosis is the defect of the granulocytes, especially the polymorphonuclear neutrophile and eosinophile leucocytes, in the blood and the bone marrow. Hematological examination reveals a high-grade leucopenia with complete or almost complete disappearance of the granulocytes and a relatively intact state of the erythrocytic and thrombocytic apparatus.

In the acute stage the disease is usually associated with fever. The general condition often suggests sepsis with jaundice. Herpes is frequently present or, instead of herpetic lesions, necrotic foci develop. The tonsils changes vary from a simple lacunar angina to a very severe necrosis which is usually covered by a pseudodiphtheritic membrane. In some cases the palatine tonsils are affected not at all or only slightly. Paratonsillitis is common. Not infrequently the first manifestation of the disease is a stubborn gingivitis which is sometimes accompanied by fever. Agranulocytic angina has often been found after the extraction of teeth. The base of the tongue is involved very frequently, and involvement of the posterior pharyngeal wall, the hypopharynx, and the larynx is not uncommon. Necrotic conjunctivitis and oedema of the lids may occur. Very often, the oesophagus is involved and covered with thrush fungus. The stomach, duodenum, ileum, colon, rectum, and anus may be affected. The vulva and introitus of the vagina are frequently involved. Pulmonary gangrene and necrosis of the liver and spleen have been reported. Bacteriological examination of the blood has dis-

closed pneumococci, the pneumococcus mucosus, the bacillus coli, staphylococci, streptococci, and the bacillus pyocyaneus.

Cases with an acute course are usually fatal. As a rule death is due to hemorrhagic bronchopneumonia. In chronic cases the patient may survive for years.

As in pernicious anemia, in which Biermer's anemia is differentiated from the pernicious anemia due to lues pregnancy, and bothriocephalus so, in agranulocytosis, primary idiopathic uncomplicated cases are to be differentiated from cases due to a definite infection or toxin. The author does not accept in its entirety the detailed classification suggested by Aubertin and Levy.

From the practical and investigative standpoints toxic cases of agranulocytosis are especially important. Among the chemical substances which may cause agranulocytosis or a similar syndrome are neosalvarsan used alone or with mercury or bismogenol, spirocid, silversalvarsan, rhodarsan, acetylarsan, mesuril, bismogenol, sanocrisin, and solganol. In nineteen cases reported in the literature (the majority of them cases of syphilis) various syndromes resembling agranulocytosis developed after treatment with one of these medicaments. From the chemical standpoint, the most important of these drugs is arsenobenzol, or at least the benzol ring, the action of which on the hematopoietic apparatus is well known. Twelve of the nineteen cases cited were those of men. The majority of the patients were between the ages of twenty and forty years.

Of chief importance in treatment is stimulation with the X-ray. In the chronic recurring type of the condition, especially in the afebrile stages, the author has given liver therapy as it stimulates not only the erythrocytes but also the granulocytic apparatus. Paschalis and Dimmel recommend the use of adrenalin. Reznikoff employs guanin and adenin. Blood transfusion and chemical stimulation therapy (foreign proteins such as omnadin and caseosan) have not proved of much value.

The author applies the term "lymphoid cells" not only to lymphocytes but also to monocytes according to Arneith's classification. He formerly called lymphoid-cell angina "monocyte angina," but he has now dropped this name because it has been found that at the height of the disease the picture is usually more lymphocytic than monocytic. The condition has no relation to the glandular fever described by Pfeiffer.

Lymphoid-cell angina is a systemic disease of lymphatic organs in which the angina assumes prominence early. In some cases, however, it is preceded by enlargement of the lymph glands and swelling of the spleen. The appellation "benign leukemia" applies to this clinical picture. The tonsillar inflammation is a lacunar, pseudomembranous, or necrotic inflammation with an exudate in which fusiform bacilli and oral spirochetes are frequently found. Occasionally, gingivitis is present.

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laryngeal region Glandular involvement is not necessarily a contra-indication However, it is contra-indicated if the mass invades the base of the tongue, if the lymph glands cannot be removed, and if the patient is cachectic

The author uses the technique of Trotter modified by Colledge The operation is preceded by a low tracheotomy through which a general anæsthetic is administered Portmann describes the steps of the operation with the aid of ten illustrations, and discusses untoward symptoms that may occur during and after the procedure Good results depend on the early diagnosis of a small growth in the hypopharynx or the vestibulum When the treatment is given sufficiently early, permanent cure may be obtained

GEZA DE TAKATS, M D

NECK

Zechel, G Cellular Studies of the Thyroid Gland
Surg, Gynec & Obst, 1932, liv, 1

In 1889 Langendorff described cells of a second type in the thyroid gland which differ considerably from the chief cells Since that time these cells have received little consideration The author calls attention to them again on the basis of studies of the thyroid gland of the dog

These cells are relatively few and are found irregularly distributed usually in the interfollicular spaces They are larger than the follicular cells and have a clear cytoplasm They are frequently surrounded by a small accumulation of colloid They may be subdivided into two groups, those with a well defined chromatin network and those with dark, evenly staining nuclei They seem to be more numerous in regenerating than in resting glands Zechel believes they are concerned with the formation of new follicles, the production of colloid, and, possibly, the inception of follicular destruction

LEO ZIMMERMAN, M D

Welti, M H The Rôle of Hyperparathyroidism in Certain Osseous Dystrophies and in Ankylosing Polyarthritis (Du rôle de l'hyperparathyroïdisme dans certaines dystrophies osseuses et dans la polyarthrite ankylosante) *J de chir*, 1931, xxxviii, 633

Parathyroidectomy is proposed as the most logical treatment of osseous and articular disturbances secondary to parathyroid hyperfunction The existence of the latter is manifested clinically by a decrease in muscular tonus, hypoeccitability of the nerves and muscles to electrical stimulation and generalized bone pains It is manifested biologically by an increase in the calcium content of the blood and excessive elimination of calcium in the urine Hyperplasia of the parathyroids is usually discovered only at operation In some of Welti's cases a palpable parathyroid adenoma was attached to the thyroid which moved during swallowing Such a tumor reveals the origin of the symptoms Extirpation of the hyperplastic parathyroid is indicated

Hyperparathyroidism seems to play a part especially in generalized fibrocystic osteitis, and it is in the latter disease that parathyroidectomy has been followed by the best results However, the operation should be done only when the osteitis is associated with changes of muscular tonus, an increase in the calcium content of the urine, a marked calcæmia, and digestive disturbances similar to those of Collip's syndrome This holds good also for the rhizomelic syndrome

Eighteen cases of hyperparathyroidism and generalized fibrocystic osteitis collected by the author are summarized They show the immediate dangers of parathyroidectomy Tetany occurred in eight cases In one case it was fatal, in two cases, serious, and in five cases, slight In the fatal case three parathyroids were removed Only one should have been excised Even the removal of one should be done only after the presence of others has been verified When the calcium content of the blood goes below 7 mgm per 100 ccm massive injections of parathormone are indicated and calcium should be administered by mouth and intravenously Oliguria should be watched for and treated

To determine the calcium content of the blood serum the author used a modification of the nephelometric method of Taillandier, measuring with Vernes' apparatus In normal cases the amounts determined by this method and by that of Hirth agree satisfactorily, they range between 90 and 100 mgm In pathological cases, especially cases of hypocalcæmia and tetany, they disagree and the Hirth method often gives normal values These differences may be due to a special state of the calcium

PAGE

Labbé, M, Villaret, M, Justin-Besançon, L, and Soulié, P A Study of the Pathogenesis of Exophthalmos in Hyperthyroidism (Etude sur la pathogénie des exophtalmies de type basedowien) *Bull et mem Soc med d hop de Par*, 1931, xlv, 1897

A critical review of the theories regarding exophthalmos is presented

Exophthalmos may be present in patients with neurocirculatory asthenia and a normal basal metabolic rate and may be absent in cases of hyperthyroidism When thyroxin was given in daily doses of 10 mgm to an obese person signs of hyperthyroidism developed, but there was no exophthalmos When 0.05 gm of ephedrin was injected ten minutes after the administration of the thyroxin, marked exophthalmos resulted within five minutes The exophthalmos was more pronounced on the left side than on the right and persisted for two hours

In patients with hyperthyroidism without exophthalmos the same dose of ephedrin was equally efficacious in producing protrusion of the eyeballs In a case of exophthalmic goiter, fifteen injections of volumbin in daily doses of 0.01 gm caused slowing of the pulse and complete retrogression of the

In 81 per cent of the cases the author was able to demonstrate a palpable enlargement of the spleen and in 4 per cent enlargement of the liver. An eruptive of small or coarse macules has often been observed on the trunk, jaundice and muco-membrane and skin hemorrhages are rare. The fever is often continuous but tends toward remission and is usually more protracted than in the simple anginas.

The leukocyte count remains considerably increased in number and the sedimentation rate as in the lymphoid diseases. The plasma of the lymphoid diseases varies in staining from the normal to the dark blue plasma color. Especially characteristic and numerous are the plasma cell monocytes and elements and the data of these lymphocytes and monocytes.

The prognosis is favorable if in spite of medical healing glandular enlargement, splenomegaly, and an atypical blood picture persist for many months.

The treatment is the same as that for simple angina. Folic acid should be given.

ASTLEY (II)

K. N. J. A. Medical and Surgical Complications of Tonsillitis in Childhood. *J. Laryngol.* 1933, 53, 21.

The author reviews the case of a 9-year-old child in whom the chief medical and surgical complications of tonsillitis were hypertrophic tonsillitis, which appeared in the form of a tonsillar abscess, and the operation of tonsillectomy. The author reports 8 cases of tonsillitis in the form of a tonsillar abscess, and the operation of tonsillectomy. The author reports 8 cases of tonsillitis in the form of a tonsillar abscess, and the operation of tonsillectomy.

Toxemia is a complication of tonsillitis. When the body is septic, a complete generalization may ensue. The author reports 3 cases of tonsillitis in which the patient died.

Acute specific tonsillitis is a complication of tonsillitis. The author reports 3 cases of tonsillitis in which the patient died.

In 18 of the cases a scarlatina rash appeared after the operation and in 1 case a diagnosis of scarlatina was made. Scarlatina rashes of a scarlatina type after tonsillectomy are not very uncommon and usually appear on the second or third postoperative day. The diagnosis of scarlet fever is never justified under these circumstances.

Acute otitis media is a very definite complication of tonsillectomy. It occurred in 60 (66 per cent) of the cases. The author discusses the prevention and treatment of each after tonsillectomy.

In 8 of the cases reviewed a postoperative mastoid abscess and intracranial infection developed. These cases are reported in detail and the pathogenesis of fulminant meningitis following acute otitis media is discussed.

In conclusion, a case of glottic stenosis requiring a laryngotomy and case of tuberculous lymphadenitis are reported and the tuberculosis of the series is discussed. J. U. C. B. S. 12, 13, 14.

W. L. Z. An Operative Procedure for the Removal of the Tonsils. *J. Laryngol.* 1933, 53, 21.

Retrospectively, the author reviews the cases of tonsillitis in which the operation of tonsillectomy was performed.

The author reports 8 cases of tonsillitis in which the operation of tonsillectomy was performed.

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The author reports 8 cases of tonsillitis in which the operation of tonsillectomy was performed.

SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS, CRANIAL NERVES

Glaser, M A, and Shafer, F P Skull and Brain Traumatism Their Sequelæ *J Am M Ass*, 1932, LVIII, 271

The authors analyzed the records of 255 patients treated for head injuries who were followed from one to five years after the accident. Their chief purpose was to learn if there was any relationship between the location of the skull fracture and the development and duration of neurological signs and symptoms. They found that fractures involving both the base and vault of the skull caused more symptoms and signs than any other type of injury. Next to this group in the incidence of symptoms were head injuries which presented no X ray evidence of fracture. Depressed fractures of the vault were associated with neurological symptoms and signs in only about 40 per cent of the cases.

Headache was the most common symptom. Convulsive states occurred in 16 cases (6 per cent). The most striking finding was the high incidence of mental changes. Twenty-four patients (9 per cent) of the series showed mental impairment. Three were confined in institutions, and practically all of the others would have been thus confined if they had not had someone to take care of them at home.

An analysis of other neurological signs and symptoms is also made. R. GLEN SPURLING, M D

Ireland, J Fracture of the Skull in Children *Arch Surg*, 1932, LXVI, 23

This article is based on a study of fractures of the skull in eighty children under the age of twelve years. In 62.5 per cent the fracture was due to a fall. In forty-five cases the parietal bone was fractured either alone or with other bones, and in thirty-three the frontal bone was fractured. In 10 per cent there was a depressed fracture, in 78.7 per cent, a fracture of the vault, and in 10 per cent a fracture of the base alone. Forty per cent of the patients were unconscious immediately after the injury and 85 per cent had visible contusions of the head. Vomiting was the most constant symptom, occurring in 63.7 per cent of the cases. The only deaths were those of two children who had fixed and dilated pupils.

When the patients were followed up three hundred and ninety-six days after the injury, sixty-nine had completely recovered, two had died, and nine had sequelæ referable to brain injury.

The author draws the following conclusions:

1. The prognosis of fracture of the skull is much better in children than in adults.

2. A high temperature after fracture of the skull is not so serious in children as in adults.

3. A high pulse rate is not a particularly unfavorable sign in skull fracture in children.

4. The prognosis is unfavorable when the pupils are dilated and fixed and when all reflexes are absent.

5. Lumbar puncture should not be a routine procedure, but if the patient shows signs of increased intracranial pressure it may be done carefully, the fluid being drained off very slowly and the drainage being discontinued if any untoward symptoms develop.

6. If tapping does not relieve the symptoms of pressure, decompression may be performed.

7. Cerebellar injuries are not as common as injuries above the tentorium.

8. Small depressions, areas of bone only slightly below the surface of the skull, and depressions involving the nasal sinuses or the sagittal sinus are best treated without operation if they produce no symptoms.

ERIC OLDBERG, M D

Laemmle, H Disturbances of Smell and Their Clinical Significance (Ueber Geruchsstörungen und ihre klinische Bedeutung) *Arch f Otol., Nasen- u. Kehlkopfch*, 1931, CXXX, 22

After cranial injuries patients often complain only of a loss of the sense of smell and it is important to determine objectively whether there is an anatomical basis for this complaint. Olfactory disturbances may be manifested as a diminution of the sense of smell (hyposmia), a qualitative change in that sense (parosmia), complete absence of the sense of smell (anosmia), or olfactory hypersensitivity (hyperosmia). They are favored by disease in any part of the nerve supply of the olfactory apparatus from the fila olfactoria to the cortical center of smell in the temporal lobes (uncus and hippocampus major). The nova may affect the olfactory nerve peripherally (swelling of the turbinates, deformities of the nasal septum, inflammatory changes in the nasal mucous membrane, and tumors), or in its central portion, in the primary olfactory neuron (olfactory epithelium, the fila olfactoria, or the olfactory bulb), in the secondary olfactory neuron (olfactory bulb to the thalamus), or between the thalamus and the olfactory cortex. Central olfactory disturbances are found in ozæna, following endonasal operations, in grippe, and with fractures of the base of the skull, concussion of the brain, hæmorrhages at the base of the brain, and tumors in the region of the nervous olfactory apparatus.

In the functional testing of the sense of smell the close relationship of this sense to two other senses must be taken into consideration. The latter are

exophthalmos first on the right side and later on the left side

The authors believe it is possible that the exophthalmos in exophthalmic goiter may be produced by several mechanisms and that there is an interrelationship between the excessive thyroid secretion, local stimulation of the cervical sympathetic and stimulation of the entire sympathetic system. Simultaneous parasympathetic stimulation does not influence the intensity of the pretracheal vessels.

GEORGE T. KAMM

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The object of the author's experiments was to produce exophthalmos in the dog comparable to that seen in patients with exophthalmic goitre, namely exophthalmos without dilatation of the pupils and in the intact autonomic system, but palpebral edema.

Of five atropine drops the patient gave the most marked results. Thereafter he did not produce the symptom but insisted the animal to the effect of epinephrine and epinephrine doth sympathize in drugs. When drugs with a parasympathetic action such as pilocarpine and scopolamine were given simultaneously mydriasis could still be produced in the presence of morphine at a normal dose.

bradycardia. The pulse rate and arterial pressure did not influence this perimittal xiphalmos. It persisted despite the inhalation of ether. The lid conjunctiva and extrinsic muscles of the eye demonstrated marked intensity of the protein. However, yolk-like material was given at a newly presented the appearance of the ophthalmos reduced at which time the patient died.

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In a study of 2,000 cases of salmonella, the authors found that about 85 per cent of the patients with this salarizing ailments were cured. They call attention to the fact that the usual high incidence of cure than is obtained in any other type of salmonellosis.

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d e n s s t a g J A N E T W I L L I A M S , M D

Jossmann, P. Brain Abscess (Ueber Hirnabscess) *Arch. charst.*, 1931, IV, 343

The author reviews 99 cases of brain abscess collected from 36 articles published in the past three years, and reports a case of his own.

The 100 cases are classified according to the localization and etiology of the lesion. The most frequent etiological condition by far was otitis media, which was the cause of the abscess in 76 per cent of the cases. In 11 per cent the abscess was secondary to frontal sinus infection. In twenty-five cases a thorough bacteriological study was made. The staphylococcus aureus was found in 8 cases, the streptococcus in 7, and the colon bacillus in 2.

In all of the articles reviewed the paucity or the unreliable character of the symptoms was stressed. Even the rupture of an abscess into a ventricle does not always produce acute symptoms immediately. It is generally agreed that many brain abscesses run their course without fever. Often a spastic obstipation develops, and sometimes there is a pulsatile throbbing in the brain similar to that noted in cases of empyema.

Of aid in the diagnosis is an isolated rigidity of the neck in the absence of Kernig's sign. Localized headaches at times give valuable indications. The author discusses the various symptoms in detail. Roentgen examination is usually not of much help. In uncomplicated brain abscess the spinal fluid findings are usually normal. However, the spinal fluid should be examined in every case, as repeated examinations may furnish valuable information.

Important findings are frequently yielded by exploratory puncture of the brain with an aspirating needle, but a negative puncture does not prove the absence of abscess. A rather wide cannula should be used and continuous aspiration with a syringe should be done. The procedure is not especially dangerous, at least, the danger is outweighed by the value of the information to be secured. The skin is rendered insensitive with a freezing mixture, the skull perforated with a hand-drill, and the aspirating needle introduced at once. The hand-drill is preferred to the electric drill because it does not interfere with the sense of touch as much as the latter.

The prognosis of brain abscess is poor, even in cases treated surgically. Of the 100 cases reviewed, an operation was performed in 93 and a cure obtained in 31. In 17 of the latter there was an abscess of the temporal lobe, in 8, an abscess of the cerebellum, in 5, an abscess of the frontal lobe, and in 1, an abscess of the occipital lobe.

The author concludes the article with a description of the operative technique and after-care.

VON TAPPEINER (Z)

Harris, W., and Cairns, H. The Diagnosis and Treatment of Pineal Tumors. *Lancet*, 1932, CCXXXI, 3.

The authors report a case of successful extirpation of a pineal tumor (pineoloma) and discuss the diag-

nosis, operative treatment, postoperative course, and complications in cases of pineal tumor in general. They believe that when the diagnosis is not certain a cerebellar exploration should be done. If this does not disclose a cerebellar tumor and later clinical signs make the presence of a pineal tumor evident, the suboccipital decompression may save the patient's vision if not his life.

ERIC OLDBERG, M D

Laruelle, L. A Routine Procedure for Ventricular Puncture (Le repérage des ventricules cérébraux par un procédé de routine). *Presse méd.*, Par., 1931, XXXI, 1888.

In the last four years the procedure described has been used in about 200 cases at the Neurological Center of Brussels. Its purpose is not to visualize the ventricles as in Dandy's ventriculography, but to permit important deductions from the use of minimal quantities of air. By lumbar puncture, 10 c cm of air are introduced with the patient in the sitting position. The head is erect and immobilized. An anteroposterior exposure reveals 2 small circular or oval bubbles occupying the roof of the lateral ventricles, and the lateral exposure shows 2 fusiform shadows, a smaller sharper shadow, and a larger, slightly less distinct shadow. In the normal person the air bubbles are of equal size and at an equal distance from the convexity of the brain. Abnormal findings include absence of shadows on both sides, lateral, cranial, or caudal displacement of both ventricular shadows, and an unequal, distorted shadow or absence of a shadow on one side.

To test the permeability in the lateral direction the patient is placed first in the right and then in the left lateral position. Under normal conditions the total quantity of air passes into the ventricle, which is higher up.

This method has given a positive result in 94 per cent of cases of verified brain tumors. The localization of the pain during the injection suggests the location of the lesion. Percussion of the skull after the air inflation may reveal gross inequalities.

As compared with ventriculography, which has definite dangers and a mortality rate of from 6 to 8 per cent, this procedure is simple and safe. It may be used routinely in cases of suspected cerebral lesions. If it fails, ventriculography or arterial visualization may be employed.

In conclusion the author emphasizes that a thorough neurological examination is still the most important step in the diagnosis.

GEZA DE TAKATS, M D

Dandy, W. E. Certain Functions of the Roots and Ganglia of the Cranial Sensory Nerves. *Arch. Neurol. & Psychiat.*, 1932, XXVII, 22.

In the use of the subcerebellar route for section of the posterior root of the trigeminal nerve in tic douloureux the sensory root is divided about 0.5 cm from the attachment to the pons. Of 200 cases, partial section of the root was done in 150. The re-

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sibly allied infections included under the general term "encephalitis"

Pathological examination reveals diffuse infiltration of the peripheral neurons and to a lesser extent of the cord and brain stem with little or no cortical involvement

The onset, signs, symptoms are too diverse for classification. The condition is characterized mainly by widespread muscular weakness, loss of the deep reflexes, disturbance of sensation of the neuritic or neuronitis type, and a selective paresis of the facial nerves. There is usually a history of an initial illness often with transitory fever, headache, pain in the back, and vomiting. Of these symptoms, headache is the most constant. Recovery is apparently complete after a few days. Following a "period of latency" of variable duration the paralytic stage develops often suddenly. The paresis is not confined to individual muscles, but involves muscle groups.

The cerebrospinal fluid may be normal or may show a pronounced increase in total protein with a slight or no increase in the number of cells—Guilain's albuminocellular dissociation.

In war time cases the mortality was high, death occurring in eight of the thirty cases reported by Bradford, usually within ten days of the onset of severe symptoms. Most of the patients who survived tended to recover rapidly and completely within six months. In other series of cases fatalities have been rare.

The syndrome is relatively frequent. It is sporadic, never epidemic, and is not limited to adults. Its duration ranges from one week to several months. Complete recovery usually results.

E S PLATT, M D

SPINAL CORD AND ITS COVERINGS

Hurst, E. W. Further Observations on the Pathogenesis of Experimental Poliomyelitis. Intrathecal Inoculation of the Virus. *J Pathol & Bacteriol*, 1932, **xxxv**, 41.

Hurst discusses the problem of the distribution of the virus of poliomyelitis produced experimentally in monkeys by intrathecal inoculations. As preliminary experiments to the injection of the virus he injected several animals with dyes such as India ink and trypan blue and charted the distribution of the dyes. In his later experiments he found that the distribution of the virus in the brain did not in the least correspond to the usual meningeal distribution of either the dye in the control experiments or the virus in the control experiments. Frequently the earliest lesions were in the floor of the fourth ventricle.

He concludes that there is as yet no evidence against an axonic entry of the virus in human poliomyelitis or indicating that participation of the cerebrospinal fluid is necessary for the spread of the virus through the nervous system.

LEO M DAVDOFF, M D

Craig, W McK, and Doyle, J B. Metastatic Epidural Abscess of the Spinal Cord and Recovery After Operation. *Ann Surg*, 1932, **xcv**, 58.

According to the literature, emergency operations for the relief of compression of the spinal cord in cases of non-traumatic origin are not common and are usually performed for infections about the spinal canal. The reported high mortality and discouraging results can probably be traced to the virulence of the organism and the lowered resistance of the patient, but delay or neglect of operative interference may be a contributory factor.

The authors report in detail a case which was under their care for more than a year and a half.

There is no definite syndrome pathognomonic of epidural abscess. The clinical picture is likely to be characterized by evidence of an acute inflammatory process associated with symptoms of moderately rapid spinal compression. Pain of sudden onset and rapidly increasing severity may be a prominent symptom. In the case reported by the authors the pain was of this type. It was also radicular in distribution and there was marked tenderness over its site.

In the beginning of the illness the patient was hyperæsthetic. Urinary retention developed. Kernig's and Lasegue's signs were present and more pronounced on the side of the pain than on the other side. The leucocyte count fell from 13,500 to 6,500 and then rose to 19,000 at the time of operation and to 23,000 forty-eight hours after the operation. The temperature varied from 99.4 to 104 degrees F. The spinal fluid was yellow and clotted. Nine days before the operation the cerebrospinal fluid was normal, but on the day of the operation lumbar puncture withdrew a clear, lemon-colored viscid fluid which coagulated on standing. The lesion was in the thoracic or thoracolumbar region.

The symptoms may be divided into two groups: those associated with inflammatory disease, such as headache, general malaise, fever, and leucocytosis, with or without evidence of bacterial invasion of the cerebrospinal fluid, and those suggesting irritation of one or more spinal nerve roots. The outstanding symptom of the second group is pain which often begins suddenly and increases in severity and may manifest the characteristics of so called root pain. This may be followed by evidence of spinal compression such as weakness, diminished sensation, and failure of function of the sphincters.

PERIPHERAL NERVES

Pollock, L J, and Davis, L. Peripheral Nerve Injuries (First Installment). *Am J Surg*, 1932, **xx**, 177.

In the first chapter of this book on peripheral nerve injuries the authors review all of the available statistics on the incidence of such lesions. Most of the statistics are based on war-time material because in civil practice no individual has sufficient material to make a profitable clinical study. In

ness of the left foot Examination revealed loss of sensory and motor function in the distribution of the common peroneal nerve The patient gave a history of chancre thirty-six years previously and his spinal fluid showed a positive Wassermann reaction A diagnosis of syphilitic peripheral nerve neuritis was made Conservative anti-syphilitic treatment was promptly followed by improvement

The authors discuss the rarity of reports of similar cases, the differential diagnosis, and the importance of conservative anti-syphilitic treatment

LEO M. DAVIDOFF, M.D.

SYMPATHETIC NERVES

Charbonnel and Massé Some Periarterial Sympathectomies with Special Indications (A propos de quelques sympathectomies artérielles d'indications spéciales) *Bull et mem Soc nat de chir*, 1931, LVII, 1473

Eight periarterial sympathectomies are reported The operations were done for Raynaud's disease, scleroderma, Dupuytren's contracture, Volkmann's ischemic contracture, traumatic osteoporosis, and gangrene from postphlebotic periarteritis

In the first case of Raynaud's disease sympathectomy of the left axillary artery was followed by a very good result Raynaud's disease is one of the clearest indications for periarterial sympathectomy In a case of false Raynaud's syndrome periarterial sympathectomy failed When the patient was first seen he had symptoms of cardiac failure, main en griffe, and cyanosis of the extremities The vasomotor disturbances were more marked on the side of the griffe than on the other side Periarterial sympathectomy was done because of the presence of an old axillary lesion due to a gunshot wound

In the third case reported a bilateral sympathectomy on the axillary artery was done for scleroderma and failed In this disease cure is not expected, but the progress of the lesions may be arrested by improving the local circulation Persistence of the depigmentation in the case reported supports the theory that the sympathetic is involved in the condition The co-existence of scleroderma with deforming polyarthritis and hypercalcemia, possible evidences of hyperparathyroidism, has been noted It is in cases of this type that parathyroidectomy and ligation of the blood supply of the parathyroids to cause atrophy seem to be beneficial

In the fourth case reported sympathectomy of the brachial artery performed for contracture of the palmar aponeurosis failed to cure, but alleviated the pain The author suggests that in very early cases parathyroid therapy might be beneficial

In two cases, sympathectomy on the femoral artery was done for osteoporosis In the first case it was followed by marked improvement, and in the second by a good result

The seventh case was that of a woman forty one years of age who had fractured the right femur four years previously The accident was followed after

two months by phlebitis of the left lower limb and ultimately by gangrene of the toes A local cure was obtained by sympathectomy on the femoral artery Three years later the patient developed aphasia without hemiplegia This threw doubt on the first diagnosis of postphlebotic periarteritis, but the toes remained cured

In the last case, sympathectomy was performed on the brachial artery for Volkmann's ischemic contracture and was followed by immediate amelioration of the pain and slight improvement of the movements of flexion in the fingers and the movements of the thumb The fingers remained in flexion After many months the patient showed marked improvement, but the role of the sympathectomy in the end-result is problematical

PAGE

Leriche, R., and Fontaine, R. The Results of Surgical Treatment of Angina Pectoris (Les résultats actuels du traitement chirurgical de l'angine de poitrine) *J de chir*, 1931, CXXXVIII, 785

Of 78 cases of angina pectoris reported by 50 surgeons in the period from 1925 to 1931, a good result for more than a year was obtained in 26 (33.3 per cent), a good result for less than a year in 22 (28.2 per cent), and improvement in 15 (19.2 per cent) The result in 4 (5.1 per cent) is unknown Death occurred on the first day after the operation in 5 cases (6.5 per cent) and between the second and thirtieth day following the operation in 6 (7.7 per cent)

The authors state that the result of operation depends on the form, the initial severity, and the character of the angina and the type of operation performed The chances of obtaining a cure by surgical treatment are best when the organic lesion of the heart is minimal

Today, sympathectomy in the cervicothoracic region is the operation of choice, vagotomy and isolated section of the depressor nerve having been abandoned since before 1925 The sympathectomy performed today is of the following 3 types

1 Removal of the entire cervical chain and the stellate ganglion

2 Removal of the entire cervical chain up to the level of the stellate ganglion, with section of the ramus communicans but preservation of the stellate ganglion

3 Removal of the stellate ganglion alone

Attempts to standardize the operation are directed toward saving the stellate ganglion, which is less dangerous, or removing that ganglion, which is more effective

Franck insists that removal of the ganglion with its sensory connections to the heart and aorta is necessary for a successful result Various surgeons oppose removal of the ganglion because of its high mortality In 1924, Leriche and Fontaine advised substituting ramsection for ganglionectomy, but after greater experience in clinical cases and research on rabbits they have come to the conclusion that careful surgical removal of the stellate ganglion is

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SURGERY OF THE CHEST

CHEST WALL AND BREAST

Bloodgood, J C Borderline Breast Tumors *Am J Cancer*, 1932, xvi, 103

Bloodgood calls attention to the fact that none of the non encapsulated cystic adenomata which were classed as benign in an article published by him in 1921 has proved malignant after ten years' observation

In this article he discusses clinically benign conditions of the breast for which operation is not indicated Borderline breast tumors in the clinical group are those in which, no matter what the signs or symptoms, malignancy cannot be ruled out with certainty

Borderline breast tumors prepared for microscopic examination and submitted to experienced pathologists for diagnosis yielded various opinions Bloodgood is convinced that in borderline cases in which the surgeon is uncertain of his macroscopic diagnosis and the pathologist is uncertain of his frozen-section diagnosis, it is justifiable to remove the tumor alone and submit the sections to a number of pathologists of larger experience if possible If the majority regard the neoplasm as malignant, the complete operation may follow, otherwise the breast can be saved

Since 1925, benign lesions have outnumbered malignant lesions Frozen section diagnosis in the operating room is more necessary to prevent the immediate complete operation for cancer when the lesion is benign than to prevent the overlooking of a malignant lesion

The largest number of borderline tumors difficult to differentiate from cancer are found among the cystic adenomata, encapsulated and non encapsulated, the intracystic papillomata in which the papilloma fills the cystic cavity, areas of chronic cystic mastitis in the walls of benign blue domed cysts, and breasts with chronic cystic mastitis Many photomicrographs of these conditions are included in the article

Clinically benign tumors of long duration are very difficult to diagnose The most helpful clinical evidence against malignancy is youth of the patient (under twenty-five years)

Cancer and chronic cystic mastitis are very rarely associated The danger of cancer in a papillomatous cyst has been exaggerated Bloodgood has no evidence that the breast with chronic cystic mastitis (Schimmelbusch) is more likely to develop cancer than other breasts He believes that there is no justification for the removal of a breast which is not involved by cancer in order to protect the patient from a possible future cancer

NATHAN N CROHN, M D

Lee, B J, and Pack, G T Irradiation of Mammary Cancer, with Special Reference to Measured Tissue Dosage, an Evolution Toward an Ideal Method *Acta radiol*, 1932, vii, 416

That pre operative external irradiation is of value in the treatment of mammary carcinoma is proved by the occasional regression of tumors subjected to it, the histological changes it produces, and the better clinical end results obtained in cases in which it is used An efficient devitalizing dose cannot be delivered by external irradiation alone For the delivery of an efficient dose, interstitial irradiation is necessary

The tissue dose delivered to the tumor by external irradiation and gold radon seeds used interstitially should be measured and expressed in skin-erythema units This dose should be prescribed

Tables prepared in the physical department enable the clinician to translate into terms of skin erythema units the tissue dose delivered, whether by external or by interstitial irradiation (i.e., by gold radon seeds)

The clinical experiments described in this article have made possible the determination of the lethal dose of irradiation for carcinoma of the breast The tissue dosage necessary to effect destruction of a radioresistant mammary cancer 3 cm in diameter or less is 12 (1,200 per cent) S.E.D. The devitalizing dose for the most radioresistant carcinomata from 3 to 6 cm in diameter is at least 13 (1,300 per cent) S.E.D.

The method of gold radon-seed implantation is unsuitable for tumors more than 6 cm in diameter

The mammary gland will tolerate safely an enormous dose of interstitial irradiation

Interstitial irradiation of the axilla is a difficult problem If radon implants (whether gold seeds or gold tubes) are placed too near the apex of the axilla, serious neuritis may ensue

The danger of spreading the disease by the method of interstitial irradiation was considered The authors noted no evidence of such dissemination in the cases studied Preliminary external irradiation lessens this danger

All irradiation should be given in a period of three weeks

If surgery is contemplated, six weeks should elapse following interstitial irradiation before radical amputation is done

Delay in the healing of the operative wound is due to one or more of the following three factors (1) excessive interstitial irradiation, (2) undue wound tension, and (3) a short time interval between interstitial irradiation and surgical intervention

Of the authors' patients who were primarily operable and were treated by interstitial irradiation

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Bloodgood, J. C. Borderline Breast Tumors. *Am J Cancer*, 1932, xvi, 103

Bloodgood calls attention to the fact that none of the non encapsulated cystic adenomata which were classed as benign in an article published by him in 1921 has proved malignant after ten years' observation.

In this article he discusses clinically benign conditions of the breast for which operation is not indicated. Borderline breast tumors in the clinical group are those in which, no matter what the signs or symptoms, malignancy cannot be ruled out with certainty.

Borderline breast tumors prepared for microscopic examination and submitted to experienced pathologists for diagnosis yielded various opinions. Bloodgood is convinced that in borderline cases in which the surgeon is uncertain of his macroscopic diagnosis and the pathologist is uncertain of his frozen-section diagnosis, it is justifiable to remove the tumor alone and submit the sections to a number of pathologists of larger experience if possible. If the majority regard the neoplasm as malignant, the complete operation may follow, otherwise the breast can be saved.

Since 1925, benign lesions have outnumbered malignant lesions. Frozen section diagnosis in the operating room is more necessary to prevent the immediate complete operation for cancer when the lesion is benign than to prevent the overlooking of a malignant lesion.

The largest number of borderline tumors difficult to differentiate from cancer are found among the cystic adenomata, encapsulated and non-encapsulated, the intracystic papillomata in which the papilloma fills the cystic cavity, areas of chronic cystic mastitis in the walls of benign blue domed cysts, and breasts with chronic cystic mastitis. Many photomicrographs of these conditions are included in the article.

Clinically benign tumors of long duration are very difficult to diagnose. The most helpful clinical evidence against malignancy is youth of the patient (under twenty-five years).

Cancer and chronic cystic mastitis are very rarely associated. The danger of cancer in a papillomatous cyst has been exaggerated. Bloodgood has no evidence that the breast with chronic cystic mastitis (Schimmelbusch) is more likely to develop cancer than other breasts. He believes that there is no justification for the removal of a breast which is not involved by cancer in order to protect the patient from a possible future cancer.

NATHAN N. CROHN, M.D.

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The danger of spreading the disease by the method of interstitial irradiation was considered. The authors noted no evidence of such dissemination in the cases studied. Preliminary external irradiation lessens this danger.

All irradiation should be given in a period of three weeks.

If surgery is contemplated, six weeks should elapse following interstitial irradiation before radical amputation is done.

Delay in the healing of the operative wound is due to one or more of the following three factors: (1) excessive interstitial irradiation, (2) undue wound tension, and (3) a short time interval between interstitial irradiation and surgical intervention.

Of the authors' patients who were primarily operable and were treated by interstitial irradiation

and radical s g y 86 per cent a e alive w thout ev dente f cancer one year and a t m nths after the b ginn ng of the treatment

Pulmonary fibro foll wing interstitial irradia ti n f the breast ; infrequent and of hltl m portanc

The techniqu of ernal irradiation and the nte tital use of gold radon eeds n measured nte dosage ; not p posed a n route n p e operati e measure b t is justified in selected cases f small ell defined ca cuoma of the breast

The authors e p r e ce in the developm nt of methods for the irradiation of mammary an er for es the concl o that th technique f gold r dor transfixat on tub s in the breast axilla nd p r m mmary regions is th m t effect e means yet de sed for the dest uct on of mammary can er and i ccessible metastases It should neve be employ d a a pre operative measure but may well b con sidered as a substitute for rad cal surgery

K. J. G. T. R. J. M. T. m. nt. f. Ca. ci. ma. f. th. Brea. t. B. f. f. S. g. 93. 45

The aut r e wews th p obl m of breast an er f m the sta dp nt of surgery as w lla from that of r l um treatme t a d rep rish e p erence with th se of d um l ne or combined with u g r y n r cas s In the fir t go cases sted the d gnos of cart noma was pr ved by biops t the compl on of the fir t u e of t m nt Be ause of the de lopment of local m ta t s s n th inci ons b p y was then ab ndo ed and the d agnos e ba ed on th symptoms igr nd re pons to tr atme t The f llow g qu tions are considered

1 Can the p mary growth n the br a t b er d c ted by rad um?

Can seco d y growths n l mpha gls ds be r d i ated and nb t l m t cs be s t t the tr at m nt?

3 Can ad um be ed t cu r l l e ; te the d a e n ca es wh h a n p abl?

4 A e the fi l r s lts bt ed w th rad um al ne r comb ed with su g r y n i p e bl a es as good a wo than b tte than th s obta ned w th l r g e y l ne?

Th s ch f m th d u n t t g mammary carcino m with radum a e () ternal irradia ti n th a c mpar ti ely l r g q ntity f rad um and (2) t r st tial r d t n with a smaller q n tity Th l t t m r thod as ad pt d in g Small un t plat um n edle having wall o s mm th k, conta nng m gm f the elem t v l r 6 m of active length and varyng a ct v l gth up to 4.8 cm were empl yed and th tme of irradia ti n pr long d by ever l days At fir t th s t atme t was used for recu nes Th fi st p m y g with was irrad at d n g t Four treatm nts w e g i ca Th growth disapp a d d th p t ent b s been ell ever c

The t chniqu us d t d a n ludes t at m nt f mam as (1) th b ast and p m y g r w h a d (2) the cc bl lymph ti a eas Th ac

c as ble lymphat c areas requir an almost consta t amount f ad um wh e s the amounts required b the breast and prima y growth dep d upon th size of the breast The best results in the breast se m to be obta n d b y using ne dles t n g 3 m gm in an act v length of 4.8 cm Th n o m are implanted o s cm part nd as far a pos bl in a plane dc p t the g owth us ally n the pl o the p e toral fasci L y th s pro do e barng of th skin is avoid d the ma n lymph chs ds draining the b a t d running in th pl e e irradia ted and the tumor t ell s d ast ly treat d thout dang r of ausing local st gh s ch as m b t o cur f the n cles were pla ed the b or st l f

The t eatm nt of the lymph chan el is direct l fi st to the ch nnel alo g the bo der of the p e r l m side to the axilla the axillary glands a d the s praclavicular and infraclav cul gl ds Th anter o media t al gl nds are t ated by pl g a ne dle n e ch f the fir t g t ferc t l ap e The needles are left in p sit on for sev n days

A d r e se n the siz of the tom is u adv apparent with n a f r ight after rem al of th needl s As th may cont u f r fo t o h month f r the treatment should b d layed f se e r l m nths In the y as s re d the were no i es to th aul ry ne es or e sels

Radi m radia ti n may b used fter local surgical em val f the growth bef re swp m ste t my and as a pr phyl ct measu after the ad al operation

The autho b l ves th t the cide of met t s s n greater after radum treatme t th after surg y and that th re ult of adum tr t m nt ompare fa bly ith th se btain d b any other form of t eatm nt He states that l ad and d sooper ble t mors radum radia ti the t at m nt f cho Fr th int rm d t inoper ble group it m y be m ined th rad cal or servati pe at on In cases of arl tumor r d al p ation is un e ss ry a e c l l e ulta an b bta n d f om th use f d um t n or comb ed w th c s conse val e surgery

F. A. B. B. v. M. D.

L. nh. m. f. E. A. Pre Oper ti. d Postope. ti. Tr at m. t. f. C. ce. f. th. B. e. t. by R. d. ti. n. (N. t. t. is. Ex. l. d. d. B. f. Radol. 93. j. 534

A complat n f statist cs on ca cer f the b e s t Engla d a d Wal a show d th t 3664 w men and 330 men died of the d se w th in t n y e s A y arly tabul t n sh s an absol t increase y by ea despt e al r d ag is impr em nt su g cal techn qu and the se f rad logical a d other method f t e m nt

The progn is d pe d ot mu h th h lo t g cal cha a ter of the l n n the stag f in olement wh th cs is f t se All rctes oiles n ha a s h rent t nd y to cn se death Early l al lesions th ut vof em nt f th sk

or glands or adhesions to deep tissues should be treated surgically. Because of the danger of disseminating mobile cancer emboli, manipulation should be limited.

Only a small number of cases reach the surgeon in the early stages of the disease. The average known duration before treatment is sought ranges from six to fifteen months. In from 75 to 95 per cent of cases examination reveals skin involvement, adhesions to muscles, invasion of glands, or distant metastases when the patient is first seen.

Metastases may be formed by way of the blood stream in any part of the body, but involvement of the skeleton suggests retrograde embolism through the veins.

Although figures relating to five-year survivals are of some value, those based on survival for ten years permit a more accurate estimate of the various methods of treatment. Figures from the London Medical Society indicate that the critical periods for recurrence are the first three years and the eighth, ninth, and tenth years after excision.

Irradiations of all types have been employed in an endeavor to ascertain definite laws of biological reaction to malignant tumors. Experimental findings suggest that it is possible to confer a certain degree of immunity to a tumor by roentgen ray irradiation, but that the effect is mainly a local one and is somehow involved with an influence on the skin and certain mild changes in the white cells of the blood.

The question of late metastases is of vital importance in relation to radiology. Cells in active mitosis are more radiosensitive than cells in a resting stage. Although many attempts have been made to distribute the irradiation dose so as to influence the cells during the sensitive phase of their evolution, some of the cells escape destruction and the tumor therefore regrows. In order to destroy the tumor, 2 separate effects must be considered, the lethal effect on the actively dividing cells and the cumulative effect on the resting cells of the neoplasm. The technique of treatment has been based largely on theories as to the effects produced on cells in active division. At first, massive single treatments were urged, but later divided doses of less intensity were advocated. In breast carcinoma the saturation method suggested by Kingery and developed by Pfahler has given more satisfactory results than were obtained either by massive intensity or weaker dosage distributed over a long period. Successful results appear to depend on whether the treatment can accomplish a dual objective—extinction of actively dividing cells and ultimate inhibition of activity of cells which are latent.

The introduction of postoperative irradiation was due to the failure of operation to eradicate carcinoma of the breast in a large number of cases. Its purpose is to destroy possible active dividing cells growing in the tissues and to control latent cells. This is accomplished by the use of divided doses of low intensity extended over a prolonged period. Treat-

ment for the control of latent cells should be continued over the period during which metastases most commonly appear viz, the third year after the operation.

Pre-operative irradiation may be given by the superficial application of radium. In this way it is possible, theoretically, to inhibit carcinoma in the breast and the lymphatics temporarily without causing a serious disturbance of the body. Evidence gained from the treatment of inoperable cases and recurrences shows that radium irradiation may prove ultimately to be superior to all other measures. The opportunities of testing the efficacy of telecurietherapy with large masses of radium have been very limited. Treatment with the X-rays has been more widely employed, and in the near future figures should be produced which will indicate its value. The most satisfactory reports come from centers where voltages of from 120 to 150 kv are used with heavy filtration to prevent injury of the skin and with relatively prolonged exposures.

The methods generally employed are

1. Massive treatment given at a single sitting or in a few days in an attempt to destroy scattered cells which may exist in tissues after surgical removal of the tumor. The author has found this treatment unsuccessful as either serious damage is done to normal tissues or the dosage is insufficient to exert an inhibiting effect on malignant cells.

2. The saturation dose advocated by Kingery and Pfahler. This will inhibit malignant cells and stimulate normal cells of the body in their resistance to invasion. The initial dose is given at a reasonable interval after operation and is followed by other doses given on approximately alternate days, tissue reaction being kept nearly at the maximum for about two weeks.

3. Intermittent treatment given at intervals of from three to seven days. This is intended to provoke a continuous biological reaction of the normal tissues to the malignant cells. It is extended over a considerable time with intermissions for recovery.

4. Divided doses of weak intensity administered for from one to three years. The value of this treatment lies in the fact that the patient is kept under continuous observation.

The author has adopted a modification of Pfahler's method. The production of a mild reaction in the tissues is followed by spaced out treatments extended over two or three months, then an interval and then repeated treatments of diminishing intensity. Time must elapse before the results can be reported.

The area of the body to which prophylactic irradiation should be administered is still to be determined.

For postoperative irradiation, Pinch employs 120 mgm of radium to irradiate the scar area, the axilla, the supraclavicular and infraclavicular fossae, and the internal mammary region. A screen of 20 mm of lead is used. The exposure is six hours daily for five consecutive days. The treatment is sometimes repeated after an interval of eight weeks. In the

author s p n t h applicati n of Columba paste
m lds t the n ck and ch t has n t mpr v d the
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A I M E L K N M D

TRACHEA LUNGS AND PLEURA

H dson W A L ng Ab R d l g 93

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The author emphasizes the importance of roentgenological help in the treatment of lung abscesses. It believes that the roentgenologist should be able to add a suggestion to the proper procedure.

Approximately 5 percent of acute leukemia cases
have a treatment in cases requiring treatment
the author has indicated a direct
method of satisfaction

H ds n reports n eteen se flu gabs ss
C R STENGLE M.D.

Bettman R B Ti T tm nt fA t Empy m
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The by t es n the tr atm nt f cut mp em
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The closed method of drying is suitable for samples of irregular shape and for the determination of moisture content and the decomposition of the sample.

The treatment of empyema should be delayed if possible until the pneumonia has subsided. However, the rate of the temperature is probably the best indicator of the time at which drainage should be done. A unilateral high temperature indicates that the infection is dependent on the lung. Empyema is usually the point at which usually some form of the eighth or ninth interpleural in the posterior

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Encapsulation and interlobular empyemata occasionally require rib resections to eliminate the cavity.

In the presence of pneumonia, aspiration is done more frequently with the withdrawal of smaller amounts of fluid in order to leave a sufficient quantity of fluid in the chest cavity to splint the diseased lung. An almost equal quantity of Dakin's solution or saline solution is then re-injected.

WILLIAM J. TANNENBAUM, M.D.

HEART AND PERICARDIUM

Burwell, C. S., and Stravhorn, W. D. *Concretio Cordis. I. A Clinical Study, with Observations on the Venous Pressure and Cardiac Output*. *Arch. Surg.*, 1932, **xxv**, 106.

Studies carried out by the acetylene method of Grollman in a case of concretio cordis in a man thirty-six years of age showed the cardiac output per minute to be lower than in any normal person studied and 36 per cent lower than an average of a series of normals. The output per beat varied between 18 and 26 c. cm., in contrast to the normal of between 55 and 80 c. cm. With exercise, the output per beat remained almost exactly at the resting level, but the total cardiac output per minute increased from 2.4 liters to 4.1 liters and the pulse rate from 106 to 144.

The essential defects in the circulation revealed by these studies were limitation of the diastolic filling of the heart by the encircling scar tissue and consequent fixation of the output per beat at an abnormally low level. The limitation of the output per beat made it impossible for the output of the heart per minute to increase except as the result of an increase in the already rapid cardiac rate. The oedema and ascites were due, not to the decrease in the cardiac output, but to the increase in the venous pressure to 240 mm. of water.

In another case of concretio cordis in which similar studies were made some months after successful decortication of the heart, the findings showed no essential variation from the average normal values.

EDWARD D. CHURCHILL, M.D.

Trout, H. H. *The Release of Pericardial Adhesions*. *Arch. Surg.*, 1931, **xxiii**, 966.

The author gives a complete review of the surgical treatment of pericardial adhesions as reported in the literature up to 1930. The article is supplemented by a bibliography of 96 references.

The operations for the release of pericardial adhesions are divided into 2 groups: (1) those that release the adhesions between the pericardium and the surrounding structures, and (2) those that remove a portion of the leather-like pericardium from around the heart and release the adhesions between the pericardium and the heart. The former include Brauer's operation, and the latter, Delorme's operation.

Trout tabulates 43 cases in which a Delorme operation was done and 54 in which a Brauer operation

was performed. He states that as it is impossible to say how many of these cases are duplicated the exact number of cases operated upon is not known. However, he believes a conservative estimate would be about 100.

A brief review of congenital anomalies of the pericardium and of autopsy statistics on pericarditis is given. The unknown cause of rheumatism is usually regarded as chiefly responsible for the formation of pericardial adhesions. However, streptococci pneumococci, and staphylococci of various types, the tubercle bacillus, the gonococcus, and influenza bacilli have been reported as being intimately related to the development of adherent pericarditis. Six cases of primary tuberculous pericarditis have been reported in the literature since 1900. In 1901 Wells concluded that tuberculous pericarditis develops in about 5 per cent of cases of active tuberculosis. This conclusion was based on 1045 autopsies. Calcareous deposits in the pericardium and its adhesions have been found in 96 cases. Case reported 91 of these cases in 1923 and gave a list of all articles on the condition appearing in the literature up to that time. The author suggests that calcareous pericarditis may be the result of tuberculous invasion.

The diagnosis of adhesive pericarditis is extremely difficult. Trout reviews the signs of the condition and the aids to diagnosis which have been mentioned in the literature. He states that no one person has had the opportunity to study a sufficient number of cases to determine the most common signs and symptoms and the laboratory procedures yielding the most conclusive evidence of the condition. The aids to diagnosis include X-ray examination, electrocardiography, estimations of the venous pressure, the presence of marked stasis with a small heart and an intermittent pulse during respiration. For cases in which the adhesions are between the pericardium and the surrounding structures particularly the diaphragm, the author advocates a left phrenicotomy in addition to the Brauer operation. He discusses the choice of anaesthesia and the various methods of approaching the pericardium, and reports in detail a case in which he performed the Delorme operation.

C. G. SHEARON, M.D.

ESOPHAGUS AND MEDIASTINUM

Klestadt, W. *Errors in the Diagnosis and Treatment of Foreign Bodies in the Esophagus and Intermediate Air Passages* (Ueber Fehldiagnose und Fehltherapie bei Fremdkörpern der Speiseröhre und der mittleren Luftwege). *Muenchen med. Wchschr.*, 1931 **ii**, 1790-1833.

Mistakes in the diagnosis of foreign bodies in the esophagus and medium-sized air passages are usually due to failure of the physician to consider the history with the symptoms. As the result of delay in the diagnosis, complications develop. The author cites the case of a fourteen-year-old boy who was treated for a long time for pneumonia in spite of the fact that he gave a history of having swallowed a collar

butt n When an attempt was finally made to remove the impacted button the bronchial wall was torn and hæmorrhag resulted from a nearby vessel.

Significant statment and symptoms of irritant of the respiratory passages are indicated. In cases of foreign body in the lung a diagnosis of bronchitis bronchopneumonia bronchiectasis whoping cough or ciliated tube colic is frequently made. Among patients with foreign body in the larynx who were admitted to the thoracic clinic were children who were referred with the diagnosis of postdiphtheritic laryngeal stenosis. In cases of foreign body in the oesophagus the use of the barium is associated with danger. When the esophagus and thoracic organ are normal oesophagoscopy may be substituted for oesophagoscopy. It can be immediately improved by the diagnosis because it permits immediate treatment. When the physician is unable to make an oesophagoscopy examination roentgen examination is mandatory. In cases in which there is good reason to suspect a foreign body an endoscopic examination should be made even if the roentgen examination is negative. Child not content with 4 per cent of patients with foreign body.

Expectant treatment is contraindicated. Death work is a frequent cause of foreign body. It was responsible in 4 cases of foreign body in the respiratory passages and 24 cases of foreign body in the esophagus seen by the author. From 0.

Attempts to remove a foreign body from the oesophagus by a blind technique may result in serious injury. The thorax has been examined in which foreign bodies with sharp edges were thereby forced still deeper into the esophageal wall. Such accidents may usually be avoided by esophagoscopy. For cases in which hypopharyngoscopy is done Klestadt recommends the use of a Braggman's forceps. In some cases the use of a forceps to supplement oesophagoscopy by surgical intervention through the esophagus.

In conclusion the author emphasizes that the patient's fat dependence is a serious factor in the physician's first consideration.

In 10 cases of foreign body esophageal dilatation by the author there were 14 deaths. In 4 of the fatal cases the death was due to technical difficulties during the dilatation. In 3 the physician cautiously treated the patient's symptoms to blame for the outcome and 4 he was entirely responsible for it. S. (H)

Campan A. Dilatation of the Oesophagus (Leb. d. Speich. n. ruf.) Orig. 1913

After reviewing the recent literature on dilatation of the oesophagus the author reports the following cases.

In the first case the patient was a 45-year-old man who had had difficulty in swallowing for some time. When he was admitted to the hospital this condition had become so severe that he could no longer swallow even liquids. He was greatly emaciated. On oesophagoscopy examination it was

seen that the lumen of the oesophagus was narrowed by the mucous membrane was relaxed. During the examination the lumen of the oesophagus was not once dilated. The card appeared normal. Later it was found that the patient had taken the substance of the opinion that the dysphagia was due to a so-called sufficient rigidity of the oesophageal musculature as the impasse in the patient's pharynx. The card showed that it was not possible to dilate the result of failure of dilatation of the pharynx. Such dysphagia may occur early in life before the generalization of symptoms are demonstrable.

In the second case the patient was a 45-year-old man who had been ill for one year. He had had occasional pain in the stomach region and had been treated for hyperacidity. Recently he had had difficulty in swallowing solid food. During the last few days he had vertigo, headache, and nausea. The symptoms ceased when he vomited all that he had eaten. Roentgen examination and esophagoscopy revealed dilatation of the oesophagus.

The author states that a cording of Rosenheim's esophagus can be demonstrated in the submucosa and in the muscularis propria of the oesophageal dilatation. The oesophagus is filled. He describes the details of the oesophagoscopy and the clinical examinations.

If dilatation is prescribed the patient's observations should be taken into consideration. Examination of the autonomic nervous system is also indicated in the therapy. The applied dilatation of the oesophagus gives good results. In doing this dilatation of the oesophagus must be handled with care. The card gives the best and the most reliable results. However, the patient must remain under treatment practically the rest of his life. Operative therapy is to be used only in the case of dysphagia not relieved by dilatation. The end operation is intervention which has for the benefit of the morbid dilatation. He holds that a dilatation of the esophagus ends a life.

C. O. KREK (H)

McDonald S. J. A Case of Reticular Cell Carcinoma of the Thymus. J. Path. & Bact. 1913

The classification of the micrometastases is considerable difficulty because of the presence of opacities of the histogenesis of the metastatic tissue and therefore the term metastatic is adopted by various investigators. McDonald accepted Marx's view. According to the latter the smallest cell of the thymus is derived from the peripheral mesenchymal lymphocytes which are epithelial in type. The epithelial cells of the thymus at an early date are of the original cylindrical epithelium of the gland changes its character and is converted to a lymphocytic cell mass. The essential factor in the development of the thymic carcinoma is later by hyperplasia of the epithelial reticulum.

partial disappearance of the lymphocytes, and the formation of Hassall's corpuscles from the epithelial cells. The greater part of the argentophile reticulum is concentrated about the blood vessels. Thus, histogenetically, the majority of the reticulum cells of the adult thymus, with the exception of a few perivascular mesenchymal cells, are of entodermal origin, while the lymphocytes are purely mesodermal origin.

On this embryonic basis malignant thymic neoplasms might be expected to arise as follows: (1) spindle-cell sarcomata from the capsule and interlobular connective tissue, (2) carcinomata from the reticulum cells and Hassall's corpuscles, and lymphosarcomata from the lymphocytes.

The author's conclusions are summarized as follows:

1 The origin of thymic carcinoma from the reticulum cells is clearly demonstrated.

2 The neoplastic reticulum cells exhibit great pleomorphism, but it is usually possible to find more differentiated types comparable to the normal cells.

3 The arrangement of the parenchyma exhibits considerable variation in different cases and even in the same case. The common types appear to be alveolar and reticular.

4 The existence of Hassall's corpuscles in thymic carcinomata is an extremely variable phenomenon and cannot be cited as a necessary criterion of thymic origin.

McDonald reports a neoplasm of the thymus in a man fifty-nine years of age which belonged definitely to the group of carcinomata derived from thymic reticulum cells. Its histological appearance was masked to a certain extent by inflammatory and degenerative changes. The arrangement of the parenchyma was of the reticular type. There was no tendency toward a perivascular arrangement of the lymphocytes. Hassall's corpuscles were absent. The tumor appeared to be of a relatively low grade of malignancy and was strictly localized, there being no evidence of infiltration of neighboring lymph glands. The author believes that it originated in a portion of involuted thymic tissue.

JOSEPH K. NARAT, M.D.

SURGERY OF THE ABDOMEN

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after gastric resection is preceded by atrophy of the mucosa in cases in which the entire stomach has not been removed. A secondary anæmia was present in two of the four cases of mucosal atrophy observed. In one case this could not be favorably influenced either by the administration of large quantities of liver or by intensive treatment with iron. In the rest of the large number of cases in which a gastric operation was done at the Leipzig Clinic definite anæmia was absent.

There are two possible explanations for the occurrence of gastritis after operation. Either it was present previously or it developed as the result of unphysiological conditions in the surgically treated stomach. In some cases of gastritis after gastro-enterostomy mechanical factors play the chief role (Gutzeit). In the development or aggravation of gastritis after resection of the stomach the removal of the antrum may be a factor. This is suggested by the frequency with which bacteria of the large intestine are found in the stomach following resection.

Treatment of postoperative gastritis gives satisfactory results for a short time, but lasting improvement is difficult to obtain. Diet and lavage are to be considered. In hypertrophic-erosive inflammations, silver solutions (from 0.2 to 1 per cent), and in the more severe inflammations, Carlsbad water and hydrogen peroxide are of value. In diffuse atrophy lavage is contra-indicated. Diathermy seems to affect the symptoms favorably.

KONJETZKY (Z)

Lublin, H. The Late Symptoms After Gastro-Enterostomy and Resection of the Stomach by the Billroth II Procedure for Gastric and Duodenal Ulcer. *Acta med Scand* 1931, Supp. vi.

The purpose of this monograph is to supply data which may be of value in explaining the nature and etiology of some of the late symptoms occurring after gastro-enterostomy or resection of the stomach by the Billroth II method for gastric and duodenal ulcer. Special attention is paid to late symptoms not produced by postoperative ulcers. These are hæmatemesis, melæna, and other gastric symptoms without a demonstrable ulcer, symptoms mainly of an intestinal character and postoperative anæmias not secondary to bleeding. The author reviews ninety-eight cases in which operation was done for gastric duodenal ulcer. The operations included eighty-seven gastro-enterostomies and eleven resections by the Billroth II method. All were performed in the period between 1919 and 1928.

Of the eighty-seven cases in which gastro-enterostomy was done, a gastrojejunal ulcer developed in ten and a recurrence in ten. In three cases of recurrence and one case of gastrojejunal ulcer the operative findings at the primary operation were supposedly negative. As in over 60 per cent of these cases the acid values were within the normal range hyperacidity could not be considered a factor in new ulcer formation. In most of these cases there was a

very rapid emptying time, but emptying was not complete.

Postoperative complaints were not limited to the twenty cases in which a recurrence or gastrojejunal ulcer developed as fifty-five patients without ulcer had symptoms of gastric origin, twenty had colic, flatulence, constipation, or diarrhoea from a disturbance of intestinal function and two-thirds of the total number treated surgically showed a definite anæmia despite absence of hæmorrhage.

The author concludes that these statistical data should be of interest especially to clinicians as they indicate that surgery should be limited strictly to cases with definite indications for operation.

SAMUEL J. FOGELSON, M.D.

Graver, L. F. A Clinical Study of the Etiology of Gastric and Oesophageal Carcinoma. In *J. Cancer*, 1932, xvi, 68.

In his studies of the etiology of gastric carcinoma the author found the factors most commonly associated with the development of the condition to be, in the order named, poor teeth, lack of teeth, other gastro-intestinal diseases, heat of ingested food, irregularity of meals, an insufficient water intake, and high seasoning of food. The corresponding factors associated with the development of carcinoma of the oesophagus were tobacco, alcohol, and insufficient water intake and dental disease and defects.

NATHAN N. CROHN, M.D.

Plummer, N. S., and Simpson, C. K. A Case of Carcinoma of the Stomach Occurring in a Patient with Atrophic Gastritis Who Had Recovered from Addison's Anæmia. *Guy's Hosp. Rep.*, Lond., 1931, lxxx, 407.

The authors report the case of a man who, at the age of sixty years, in 1923, developed dyspnoea, yellowness of the skin, and weakness. Analysis of his gastric contents revealed no free acid. In 1926 he presented the typical signs of Addisonian pernicious anæmia. Roentgenograms of the gastro-intestinal tract were negative and blood transfusions and liver therapy resulted in prompt recovery. In 1931, although still free from symptoms the patient noted hard glands in his neck. Gastro-intestinal roentgenograms then showed a filling defect in the pyloric vestibule, and the stools contained occult blood. Partial gastrectomy was done. The patient became maniacal and died ten days later.

The resected portion of the stomach showed a constricting annular carcinoma in the prepyloric region. The remaining gastric mucosa was atrophic. The neck nodes were tuberculous. The autopsy findings indicated a recent recrudescence of the Addisonian anæmia. This was probably explained by the fact that no liver was administered for three weeks before death. Although the anæmia had been present for nine years and liver had been taken in relatively small doses for five years, there was no histological evidence of degeneration of the spinal cord.

C. D. HAAGENSEN, M.D.

or so called chocolate cysts of the ovary which have perforated the surface of the ovary. Clinically, because of their mode of invasion, they resemble malignant growths, but histologically they are benign.

Carcinoma of the small intestine is very uncommon, doubtless because of the absence in the small intestine of conditions producing chronic irritation of the lining mucous membrane and the absence of sudden changes in the type of cell composing this part of the intestinal tract. HARRY W. FINK, M.D.

Bachy, G. Ileomesenteric Infarct and Strangulated Hernia (Infarctus ileo-mesenterique et hernie étranglée) *Bull et mem Soc nat de chir*, 1931, LVII, 1487

The case reported was that of a woman aged fifty-six years who developed an infarct of a loop of intestine in a femoral hernia which until then had been small. The hernia increased to ten times its earlier size, but remained painless. General phenomena of severe intoxication appeared very quickly. There were no signs of occlusion. As the intestine was free from evidences of gangrene, resection was not done. The patient died forty hours after the operation.

Reports of cases of ileomesenteric infarct combined with strangulated hernia are rare. There appear to be two kinds of infarction in strangulated hernia: infarction caused by vascular lesions and gangrene from infection without a vascular lesion. Bachy's case was especially unusual as there was not only an infarct of the incarcerated mesentery and intestinal loop, but also an infarct which extended 11 cm above and 6 cm below the strangulated loop.

It is not difficult to understand how a gangrenous infection as virulent as that developing in a strangulated segment of intestine should become generalized in the neighboring parts of the intestine after reduction of the strangulation or first in the mesentery and then in the intestine and cause necrosis even in the absence of obliterating vascular lesions. Such a complication probably explains some of the unexpected deaths after the reduction of strangulated herniae. The mesentery should be carefully examined. Extensive intestinal resection done by Patel, Esau and Philipowicz in analogous cases resulted in cure. The operation was performed after spontaneous reduction of the hernia, on indications furnished by general disturbances, persistence of the occlusion, and, in the case reported by Patel and Esau, the appearance of melena. In this way the infarct was found. The resections included 15, 20, and 85 cm of small intestine respectively. PAGE

Bachy, G. An Ileomesenteric Infarct from Vascular Thrombosis (Infarctus ileo-mesenterique par thrombose vasculaire) *Bull et mem Soc nat de chir*, 1931, LVII, 1491

The author reports the case of a large, strong woman aged thirty-eight years who entered the

hospital with intestinal occlusion which had begun four days previously. No feces had been passed for five days and no gas for three days. The abdomen was inflated and painful throughout. The patient vomited after drinking water.

When the abdomen was opened a black mass consisting of a part of the small intestine was found. The mesentery was infiltrated and dark purple. About 1 m of the small intestine was affected. The mesentery was infiltrated as far as its root. The intestinal loop was resected with a wedge of the mesentery which corresponded to the thrombosed region and an end-to-end anastomosis was done.

During the first forty-eight hours after the operation the patient received an injection of 10 c cm of hypertonic salt solution every four hours. On the third day she passed gas and some diarrhoeal stools. On the sixth day all of the symptoms recurred and death resulted after a few hours.

Examination made through the operative wound showed that the thrombosis had continued, the mesentery had become infiltrated and black above the suture, and the small intestine had become blackish and gorged with blood above and below the anastomosis. The venous thrombosis extended to the portal vein, but the latter appeared permeable. The condition seemed to be an intestinal necrosis secondary to venous thrombosis of the mesentery. The thrombosis was apparently several hours old at the time of its removal as there was a considerable network of fibrin in the venous clot.

PAGE

Moulonguet, P. An Ileomesenteric Infarct from Segmental Ulcerous Enteritis (Infarctus ileo-mesenterique par enterite ulcereuse segmentaire) *Bull et mem Soc nat de chir*, 1931, LVII, 1504

The case reported was that of a man aged forty-seven years who sought treatment for abdominal pain which had begun suddenly at 1 o'clock the previous morning. Paroxysms of pain in the umbilical region had recurred all night, and there had been two attacks of vomiting. Thirty-six hours after the first attack the patient entered the hospital with a temperature of 37.8 degrees C. The abdomen was supple. Palpation caused severe pain in the umbilical region and revealed the presence of a deep elastic tumefaction of inexact limits which was dull on percussion.

The next day the patient was exhausted and his temperature was 38 degrees C. He had had two more attacks of vomiting. No feces or gas had been passed, but there was no pain of the colic type. The ampulla was empty. The retro-umbilical swelling seemed to consist of a distended loop of intestine full of fluid. A diagnosis of volvulus of a loop of small intestine and mesenteric infarct was made.

At operation, sanguinolent fluid was found in the peritoneal cavity. The swelling consisted of a loop of small intestine at a distance of about 50 cm

Douglas rather than to the skin of the perineum under severe tension, and introducing into it a Paul tube. The perineal wound will then heal by epidermization which finally forms a cicatricial tunnel with relative continence.

The operative technique is divided into two stages. In the first or abdominal stage the site of amputation of the colon is selected, the superior hemorrhoidal artery is ligated, the pelvic mesocolon resected, the rectum liberated posteriorly, the bowel tied, and peritonization done over the loosened segment which is lowered, fixed down behind the rectum by a gauze drain attached to the long threads tying the bowel, and covered with peritoneum. In the perineal stage, the anus is closed with a silk ligature, a sound is passed into the urethra in the case of the male, and the anus is freed by a triangular incision. The dissection is then carried upward with section of the levator ani and the raphe. The pouch of Douglas is then opened. The bladder and ureters, and, in the female, the vagina, are avoided by dissecting close to the bowel. The gauze drain packs are identified and after the ampulla has been completely freed the whole mass is drawn out of the perineum. Just above the point of ligation of the bowel through the abdomen a Paul tube is inserted and the bowel cut off and sutured to the surrounded denuded pelvic wound.

The authors have used this procedure in eleven cases. The six male patients ranged in age from thirty-six to fifty-eight years and the five female patients from thirty-eight to sixty-five years. There were two operative deaths, both those of males. The operative mortality was therefore 18.2 per cent.

KELLOGG SPEED, M D

LIVER, GALL BLADDER, PANCREAS, AND SPLEEN

Stewart, W. H., Einhorn, M., and Illick, H. E.
Hepatography and Lienography Following the
Injection of Thorium Dioxide Sol (Thorotrast)
Am J Roentgenol, 1932, xxvii, 53

After citing some previous work done by them with tetra-iodophenol-phthalein to render the liver and spleen more distinctly visible in the roentgenogram, the authors report the results obtained in similar studies carried out with thorotrast in a series of eight cases. The technique used is described in detail. The maximum density of the liver and spleen was reached in about a week or two, depending on the number of injections, and then persisted as long as the patients were under observation. In the only patient of the series who is now living it is known to have persisted for eight months. Nearly all of the patients who were examined had enlargement of the liver due to some kind of pathological involvement. In the cases of all except one who died before any perceptible increase in the density of the liver had been obtained, the liver shadow was rendered more opaque and its outline more sharply defined.

The test clearly outlines the liver and spleen so that they may be differentiated from other intra-abdominal masses. In some of the cases even considerable enlargement of the spleen had not been recognized previously by other clinical methods. Certain types of malignant involvement of the liver can be diagnosed from the roentgen findings. In cirrhosis and other forms of generalized hepatic enlargement there was no characteristic finding except an increase in the size of the organ.

In all of the cases reviewed the thorotrast was well tolerated up to an hour after the injection. Five patients had no definite after-effects. Three had vomiting attacks for several days after the second injection, and two had hemorrhages. Seven of the eight patients died subsequently, but their deaths were not attributable to the thorotrast as they were suffering from severe disease and doubtless would not have lived even if the test had not been made.

The thorium dioxide sol is deposited in the endothelial cells of the liver and spleen. It probably remains there permanently and is at least a potential source of future trouble. In one case the spleen removed at autopsy and left over a photographic plate for a day contained enough thorium to register an image on the plate. Control spleens were negative. In four cases autopsy revealed acute splentitis but it is questionable whether this was due to the thorotrast.

In summarizing the authors state that while the contour and details of the liver and spleen can be visualized in the roentgenogram following the intravenous injection of thorotrast, the test does not seem to yield enough independent information to justify its use except in unusual cases. The thorium is retained indefinitely in the liver and spleen, and the injection is sometimes followed by a very severe reaction.

Seven of the eight cases reviewed are reported briefly with roentgenograms.

ADOLPH HARTUNG, M D

Solé, R. Cortical Hepatitis Causing Hepatic Colic
(Córteohepatitis determinando cólicos hepáticos.
Observación con estudio histológico) *Sen ana med*,
1931, xxxviii, 1757

The author reports a case to demonstrate the value of biopsy in chronic cholecystitis. Graham found lesions of the liver in 80 per cent of cases of this condition.

Solé's patient was seized with severe pain in the right hypochondrium radiating to the scapula, nausea, and the vomiting of bile-stained vomitus following a miscarriage. There was no fever. Examination revealed tenderness in the region of the gall bladder and over the epigastrium. The liver could be palpated and was increased in density. Vision in the right eye was reduced by albuminuric retinitis. X-ray examination was negative.

At exploratory examination the liver appeared normal on inspection, but the density of its anterior border was increased. On the border, 5 cm from

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Obstructive jaundice has been found in most cases, and may be extreme, fluctuating in severity, or intermittent

The presence or absence of pain seems to be of little, if any, diagnostic significance. Biliary colic is not uncommon with tumors of the bile ducts unassociated with cholecystitis or cholelithiasis.

The specific cause of obstructive jaundice is not easily diagnosed before operation. A positive diagnosis is rarely possible.

Obstructive jaundice is usually a surgical problem, regardless of the lesion causing the obstruction.

Surgical treatment should have a favorable effect because significant symptoms bring the patient to the physician early in the course of the disease, and the tumor is small, slow growing, and late to metastasize. Obstructive jaundice usually causes death before the tumor has passed the stage of operability.

Operation on tumors of the bile ducts has a high mortality because of the tendency toward hemorrhage and the technical difficulties of operation on the biliary tract. Favorable results are attainable

Grimm, E. C., and Steopoe, V. Choleldochoscopescopy (La choleldochoscopescopie). *Presse med.*, Par., 1931, *XXXIX*, 1907.

The authors describe an instrument, a choleldochoscope, and a procedure by which it is possible to determine the site, extent, and histological character of lesions of the walls and branches of the biliary canals well up into the liver and to dilate, cauterize, and implant radium needles or prosthetic tubes in the biliary tract.

The biliary tract area is first exposed by laparotomy. Enlarged lymph nodes, anatomical anomalies, and adhesions are not considered contraindications to the examination. A choleldochotomy opening from 4 to 5 mm. long is made just above the upper border of the duodenum; the lips of the wound are held open with forceps, and the bile ducts are explored by means of Hegar bougies to ascertain their direction, size, and permeability. The choleldochoscope is then introduced. By the light of this instrument it is possible to inspect the mucosal lining directly. The bile is aspirated in a manner analogous to the aspiration of urine with the ureteroscope. The opening of the cystic duct, the branches of the hepatic duct, and all of the common duct can be thus visualized.

The authors believe this method will prove of great value especially for the early diagnosis of cancer in the ampulla and common duct.

KELLOGG SPEED, M. D.

Zininger, M. M., and Cash, J. R. Congenital Cystic Dilatation of the Common Bile Duct. Report of a Case and a Review of the Literature. *Arch. Surg.*, 1932, *LXIV*, 77.

Eighty-two true dilations of the common bile duct—most of them due to congenital abnormalities—have been reported in the literature. The majority of the patients were females and were operated upon

between the ages of ten and thirty years. In most cases there was a palpable tumor associated with pain and jaundice. A correct pre-operative diagnosis was made in three cases, but in the majority the tumor was considered an echinococcus cyst. In a number of cases the nature of the condition was not recognized even at operation, and in practically all of these the patient died. In all cases the tumor was retroperitoneal and lay either behind or in front of the duodenum. The common duct, hepatic duct, cystic duct, and pancreatic duct were more or less involved. The capacity of the cysts varied from 30 to 8,000 c. cm. In most instances the cyst wall was composed mainly of fibrous tissue. In some cases there was complete atresia of the common duct. The contents of the cyst were infected in only fourteen of the eighty-three cases.

The treatment consisted of drainage generally by marsupialization. This procedure was not uniformly satisfactory. Aspiration of the cyst alone was invariably fatal. Secondary operations had a very high mortality. Excision of the cyst was particularly dangerous. The total operative mortality was 65 per cent. The mortality was lowest in cases treated by surgical internal drainage.

The authors report the case of a Chinese woman forty years of age who gave a five-year history of epigastric pain and intermittent vomiting without jaundice. Six weeks before the patient's admission to the hospital the pain became very severe and associated with almost continuous vomiting, chills, and fever. There was no uricemia. A tentative diagnosis of subacute perforation of a gastric or duodenal ulcer or gall-bladder disease was made. Laboratory examinations were negative except for a low white cell count. The gall bladder did not cast a shadow in the roentgenogram with the Graham dye.

The patient was kept under observation for six weeks until an exacerbation of her symptoms occurred and a mass was felt below the right costal margin. A diagnosis of acute cholecystitis with hydrops was then made. Operation revealed a large red cystic mass with edematous walls lying between the liver and stomach anterior to the foramen of Winslow. There were no adhesions. The gall bladder was small and communicated directly with the cyst mass through a large cystic duct. The pancreas felt normal. The cyst was aspirated and united by lateral anastomosis to the duodenum. It contained no stones and communicated with the duodenum. A pure culture of bacillus paratyphosus A was grown from the cystic bile, and a Widal test was later positive.

Eleven days after the operation the patient died of paratyphoid infection with metastatic abscesses in the liver. At autopsy the cyst was found to be 10 cm. in diameter and covered by a fibropurulent exudate. The hepatic and cystic ducts communicated with it, but the terminus of the common duct was unusually small. The mucosa of the cyst was similar to that of the gall bladder, but the wall con-

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GYNECOLOGY

UTERUS

Spinelli, M The Indications for Surgery and Radiotherapy in the Treatment of Fibromyomata of the Uterus (Le indicazioni della chirurgia e dell'actinoterapia nel trattamento dei fibromi uterini) *Actinoterapia*, 1931, 7, 41

The author reviews 55 cases of fibromyoma of the uterus in which he performed a laparotomy, 24 in which he performed a vaginal operation, and 252 which he treated by roentgen or radium irradiation. On the basis of his experience he draws the following conclusions with regard to the indications for treatment.

Surgery should be used in cases of myoma complicated by pregnancy, pedicled submucous myoma, pedicled subperitoneal fibroma, fibroma complicated by tumor of the ovary or some other abdominal condition requiring operation, fibroma with ischaemic degeneration or suppuration, cases in which the diagnosis is doubtful, and cases of fibroma in women under forty years of age which can be removed by myomectomy. In other cases, irradiation is to be preferred as it is free from danger, it almost always gives good results, it is cheap and convenient, and it can generally be given without hospitalization.

AUDREY GOSS MORGAN, M D

Villard and Labry The Results of Radical Hysterectomy for Cancer of the Cervix (Resultats de l'hysterectomie elargie dans le cancer du col uterin) *Lyon chir*, 1931, xxviii, 736

Labry reports the results obtained from the treatment of carcinoma of the cervix by radical hysterectomy according to the technique devised by Villard. In this technique the chances of peritonitis due to opening of the infected vagina are reduced to the minimum by removing the uterus, parametria, and vagina together in the last stage of the operation after complete haemostasis has been obtained.

In the cases reviewed the immediate postoperative results were very encouraging. The surgical mortality in seventy cases was 7.14 per cent. In no instance could death be attributed to peritonitis. Serious postoperative morbidity developed in only ten cases. Two patients died of embolism and one of bronchopneumonia. The rest recovered, among them two who had pulmonary infarction, one who had phlebitis, three who had a ureteral fistula, and one who had intestinal obstruction.

The diagnosis of cancer of the cervix was confirmed in every case by histological examination. All patients who could not be traced after the operation were considered to have died from recurrence even though they may have succumbed from an intercurrent infection.

The results in the cases of fifty patients who have been traced are summarized as follows:

Of nineteen patients who were operated upon more than five years ago nine (47.36 per cent) are alive and well. Ten (52.63 per cent) succumbed during the fifth year after the operation.

Of thirty-eight patients who were operated upon more than three years ago, twenty-two (57.89 per cent) are alive and well.

Of fifty patients operated upon more than one year ago, forty-three (86 per cent) are alive and well.

A recurrence developed in nineteen cases. In five, it appeared during the first year after the operation, in nine, during the second year, in four, during the third year, and in one, after the fifth year. In only five of the nineteen cases of recurrence was it found possible to employ palliative treatment with radium.

The prognosis following operation depends upon the following factors:

1 The age of the patient. Carcinoma of the cervix occurring in young women is especially malignant.

2 The macroscopic appearance of the lesion. The association of infection with neoplastic infiltration often makes it difficult to determine the extent of the lesion.

3 The pathological type of the neoplasm. The large, ulcerating, vegetating types of carcinoma involving the entire cervix and the cul-de sac often have a better prognosis than the small indurating types involving the external os.

4 Glandular involvement. This was present in one-fourth of the cases reviewed. In most instances it could not be diagnosed clinically.

Radium therapy given before operation has yielded good results in several grave cases. It is of value also in the treatment of recurrences in the vaginal stump.

In conclusion Labry says that all operable cases of cervical carcinoma should be treated by radical hysterectomy, and that radium is indicated when surgical removal is impossible.

In the discussion of this report, Villard said that pre-operative irradiation may improve the patient's condition and diminish the size of the neoplasm but it not infrequently renders later surgical intervention more difficult by producing adhesions which destroy anatomical relationships and endanger the bladder and ureters. While radium irradiation may replace surgical treatment in the future, at present it is of value chiefly in the treatment of recurrences and inoperable cases and occasionally in the pre-operative treatment of advanced cases.

HAROLD C. NACE, M D

ADNEXAL AND PERIUTERINE CONDITIONS

G dn W S On th Origin of O a lara Epith
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The cell surrounding the ovum in the graafian follicle an undifferentiated cell which is capable of developing in more than one way. Under the influence of what may be all different stimuli they develop to connective tissue whereas under the influence of the stimuli they develop into true epithelium. The transition stages from non-malignant epithelial cell can be differentiated by tracing

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The author sprayed the group of fats and two weeks later injected one group with the injection of an alcoholic extract of human placenta. They then transplanted the hypophyseal of both groups into female mice. The ovary of the mice carrying the hypophyseal tissue from the injected group was much larger than that of the mice carrying the hypophyseal tissue from the control rats.

In another group of patients the anterior lobe of the hypophysis was removed. The patients were followed up with the usual standard physiological salt balance and the results of the thyroid and the urine nitrogen and the basal metabolic rate were varying amounts. The basal metabolic rate was all very low. The basal metabolic rate was all very low. The basal metabolic rate was all very low.

When the hypophyseal lobe was taken from a woman the uterus was small and the suprapubic pressure was normal. The uterus was small and the suprapubic pressure was normal. The uterus was small and the suprapubic pressure was normal. The uterus was small and the suprapubic pressure was normal.

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J r i J Intraligamentous Tumors of the Ovary (Ligamentous Tumors of the Ovary) R A J 93
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The author reports the generally accepted theory that the ovarian tumors may develop with the ligament. The fact that because of the peritoneal position of the ovaries ovarian tumors can never be more than partly intraligamentous and that inflammatory implants can also be observed in the vicinity of the ovaries so located. In the parovarium point out that the ovarian tumors are only pseudo-intraligamentous. The apparently intraligamentous development due exclusively to inflammatory adhesions to the ovarian tumors are not really ligamentous but are inflammatory adhesions to the ovaries.

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tubal or retroligamentous hydrocele" In the latter, an encapsulated exudate was formed in such a way as to cause the tube to become adherent to the posterior surface of the uterus and the peritoneum of the pouch of Douglas. The exudate collected in a pocket formed between the posterior leaf of the broad ligament, the posterior leaf of the mesosalpinx which hung down over the ovary, and the tube which was adherent to the uterus and the peritoneum of pouch of Douglas. It suggested an intraligamentous tumor, but in reality was a complete analogue of the pseudo-intraligamentous tumors.

As to the operative technique, it has been recommended that the broad ligament be divided and the tumor carefully shelled out from the parametrial tissue. Aside from the fact that this enucleation is usually very difficult, severe hemorrhages often occur from the venous plexuses or as the result of injury to the ureter which has been dislocated by the tumor. Great difficulties are encountered also in the peritonization of the large wound surface remaining.

Paylik recommends a different procedure. He starts the dissection at the uncovered portion of the tumor, usually in the tubal angle. The tube and the ligamentum ovarii proprium are separated from the tumor, and after their ligation the broad ligament is dissected away step by step and divided behind the course of the ligamentum teres until the infundibulopelvic ligament comes to view. The latter also is ligated and divided. If the cystoma is very large, it is punctured and reduced in size and then usually peeled loose bluntly from the posterior surface of the uterus and the cavity behind the uterus. Sharp dissection is seldom necessary. This procedure does not produce a large wound surface in the small pelvis and does not threaten injury to the vessels and ureters. The narrow wound surface extends from the tubal angle to the infundibulopelvic ligament and is closed by continuous suture.

Since the author has regarded all intraligamentous tumors as pseudo intraligamentous and has operated upon them by the method described, he has never observed complications of any sort. Peritubal hydrocele is operated on according to the same principles typical adnexotomy being performed after slitting of the sac from the tubal angle.

E. GOLDBERGER (G)

MISCELLANEOUS

Siebké, H. Thylinin and Androkinin, the Female and Male Sex Hormones, in the Body of the Female (Thylinin und Androkinin, das weibliche und männliche Sexualhormon im Körper der Frau). *Arch f Gynach*, 1931, cxlii, 417.

The author believes that thylinin develops the uterus so that it can carry a pregnancy to term and builds up in the endometrium the mucous membrane of the first half of the menstrual cycle so

that the secretory phase of the mucosa is possible. The results of determinations of thylinin content of the urine of women which were previously reported by the author are supplemented in this article by the results of further studies carried out by the same method. The hormone was extracted by triple boiling for two hours with benzol and later taken up in oil. The amounts of hormone excreted in the faeces were disregarded. In the cases of four women it was found that in the normal menstrual cycle the maximum amount of thylinin excreted in the urine is reached at about the tenth or eleventh day preceding the next menstruation and the minimal amount shortly before menstruation. These findings refute the generally accepted theory that the excretion of the hormone is greatest at the time of menstruation.

The author presents also curves of the excretion of thylinin in the urine in the apparently prolonged menstrual cycle. These curves paralleled all histological determinations made heretofore on the growth and atresia of the non-maturing follicle. In metropathia hæmorrhagica it was found that the urine collected on the nineteenth and twentieth days before the onset of the metropathic bleeding contained 362 mouse units for the two days whereas in the previous and subsequent period of amenorrhœa it contained 49 mouse units daily. During amenorrhœa the urine may show slight amounts of thylinin constantly or occasionally, or none.

From these findings the author draws critical conclusions regarding the therapeutic use of the hormone. Numerous problems are still unsolved. There is a disharmony between the urinary and blood curves of thylinin in the normal menstrual cycle. In the blood, the greatest concentration is found shortly before menstruation, whereas in the urine the amount of hormone at that time is especially small. Siebké suggests that this may be explained by slight chemical changes occurring in the body which cause a considerable variation in the strength of the hormone and under certain conditions pathological effects.

The second part of the article deals with androkinin. To demonstrate this hormone the author used the cockscomb test, the cytological regeneration test, and the mitogenesis test. The cockscomb test is based on the fact that the cockscomb shrinks when the testicles are removed and this degeneration can be prevented by the continuous administration of androkinin. The author's tests were made on pure-blooded white Leghorn capons which were castrated at the age of two or three months. The author describes the technique of the castration and its effects on the comb in detail. The changes in the comb were measured on photographs showing the silhouette of the comb. The size of the comb was determined on the photographs with a planimeter. The test is considered positive when the enlargement amounts to more than 15 per cent. Values less than this cannot be accepted as full cockscomb units. The enlargement of 15 per cent

in detail the anatomy of the vesical sphincter, which includes practically all of the connective tissue in the pelvis. He reviews the different operations in their chronological order and compares their purposes and techniques. He performed his first operation for urinary incontinence, a vesicovaginal interposition of the uterus, in January 1908. His aim was to provide the urethra and bladder with a firm support against the pressure of the abdominal muscles causing the involuntary loss of urine. He employed Schauta's technique. Complete relief resulted for six months, but at the end of that time there was a slight recurrence. The author attributed the recurrence to too high and too horizontal fixation of the uterus. The body and cervix of the uterus lay well above a line passing through the symphysis and the coccyx.

Since 1909, Natvig has performed the operation with an improved technique. He fixes the interposed uterus lower down, directly in the genital hiatus, by a procedure he calls "anterior hiatopexy." The corpus of the uterus is fixed on each side by a deep suture to the lateral portion of the plica angularis vaginae with its strong tissue mass attached to the descending ramus of the pubic bone. The procedure is shown in several illustrations. The uterus is brought into a more vertical position which is little affected by the pressure of the abdominal muscles and forms an excellent support for the urethra and the neck and base of the bladder.

The author has employed also the technique of Bonney (1923) longitudinal plication of the sub-urethral layer of fascia, and the Goebell Stoeckel plastic operation utilizing the pyramidal fascia.

Sixty-three cases operated upon in the period from 1908 to 1930 are reviewed. In fifty-five the incontinence was mechanical and in eight it was a symptom of a functional nervous disturbance. In forty-two of the fifty-five cases of mechanical incontinence the condition was caused by a birth injury, in twelve, by cicatrices, inflammatory fixations, or the traction of a tumor, and in one, by roentgen treatment of the myomatosus degenerated interposed uterus. In twenty-seven of the cases in which it followed a birth injury there was a complicating urogenital prolapse.

In one case (the first case) of mechanical incontinence the Schauta interposition with relatively high fixation of the uterus was done and followed by improvement. In thirty-nine cases, interposition with lower fixation of the uterus under the pubic arch, anterior hiatopexy, was performed and resulted in a complete cure in thirty-seven and a practically complete cure in two. Of ten patients treated by the Bonney fascial plication, nine were cured and one was benefited. Three of these women later gave birth to children. Two of them remained continent. In the case of the third, whose condition was only improved, the failure to obtain a complete cure was due to the fact that pregnancy occurred too soon after the operation and was associated with hyperemesis. The Goebell Stoeckel operation

utilizing the pyramidal fascia was performed in two cases and resulted in a cure in both. In three cases a myomatous uterus was removed.

The author operated also on the eight cases in which the incontinence was due to nervous excitement, certain suggestive impressions, sensory impressions, or irritability of the bladder. Three women who had been incontinent since childhood and had acquired a prolapse from child-bearing were treated by an interposition operation with anterior hiatopexy. In the cases of the five others the Bonney fascial plication was done. Five of the eight patients were completely cured and two were greatly benefited. In the case of a girl of fifteen years the operation failed.

The author comes to the following conclusions:

1. Mechanically caused urinary incontinence may be cured by operation. In cases without prolapse, Bonney's fascial plication is indicated. In cases with prolapse, the interposition operation with low fixation of the uterus, anterior hiatopexy, is usually to be preferred. When the child-bearing function must be preserved the prolapse must be treated separately. Under such circumstances the plastic operation utilizing the pyramidal fascia is to be considered and cesarean section must be done in subsequent pregnancies.

2. Nervous urinary incontinence may be treated surgically along the same lines.

3. When there is a complicating urinary fistula interposition with hiatopexy is usually preferable to the plastic operation utilizing the pyramidal fascia.

4. In congenital conditions such as epispadias and hypospadias, the plastic operation utilizing the pyramidal fascia is the best procedure.

5. In cases of urinary incontinence due to disease of the central nervous system, operation should not be attempted.

SAENGEF (G)

Meaker, S. R. Some Observations upon the Causes of Human Sterility. *J. Obst. & Gynec. Brit. Emp.*, 1937, xxxviii, 807.

The author's conclusions are based on an organized group study of sterility. The causative factors in twenty-five completely studied cases are discussed.

Local abnormalities in the male contributing most directly to sterility are testicular and epididymal lesions. Hypoplasia or atrophy of the testicles interferes with spermatogenesis, and inflammatory or other conditions may create an epididymal blockade. Other genital lesions appear to be of relatively minor importance.

In the female four frequent abnormal conditions of the reproductive organs which may cause sterility are developmental arrest, hostility of the endocervical mucus, tubal blockade, and mechanical interference with ovulation. Some degree of hypoplasia of the female genital organs can be identified in a large proportion of cases of sterility.

The study of sterile human matings reveals a high incidence of certain constitutional abnormalities.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Candela, N. A Comparative Study of the Biological Test of Brouha and Simonnet and the Aschheim-Zondek Reaction (Studio comparativo tra la prova biologica di Brouha e Simonnet e la reazione di Aschheim-Zondek.) *Riv Ital di ginec*, 1931, xiii, 1

Aschheim and Zondek devised a method of making an early diagnosis of pregnancy by injecting the urine of the woman into immature female white mice. In the absence of pregnancy the injection does not produce any change in the genital organs of the mice, but in the presence of pregnancy it causes development of the uterus, maturation of follicles, hydropic follicles with hæmorrhagic points, luteinization of some follicles, and intense follicular atresia. Only the changes in the ovary show that the reaction is positive as increased size of the uterus may be caused by ovarian hormones in the urine.

Brouha and Simonnet suggested modifying this reaction by injecting the urine into male instead of female mice. They claimed that there is an antagonism between the female genital hormones and the male sexual organs and that if the urine caused development of the male genital organs it would prove pregnancy as ovarian hormones would not stimulate the male genital organs but, on the contrary, would be antagonistic to them.

In a comparison of the reaction of Brouha and Simonnet with the Aschheim-Zondek reaction the author found that while the Aschheim-Zondek reaction is constantly positive in cases of pregnancy the Brouha Simonnet reaction is very inconstant. In Candela's opinion there is no conclusive evidence of an antagonism between the female sex hormones and the male genital glands.

AUDREY GOSS MORGAN, M D

Solomons, B. Methods of Obstetrical Diagnosis and Treatment at the Rotunda Hospital in 1909 Compared with 1929. *Proc Roy Soc Med*, Lond., 1932, xvi, 312

This article by the Master of the Rotunda Hospital, Dublin, compares the working plant, the types of cases, and the methods used in 1909 and 1929. Solomons draws the following conclusions:

1 Midwifery changed greatly in the twenty years reviewed.

2 In primiparæ the head generally does not engage before the onset of labor.

3 The fundus of the uterus should not be controlled during the third stage of labor.

4 Packing of the vagina is not necessary in cases of accidental hæmorrhage.

5 The marked increase in the use of cæsarean section is difficult to explain.

6 The teaching of students was improved during the period reviewed. A. H. GLADEN, JR., M D

Celentano, P. The Behavior of the Platelets in Obstetrics and Gynecology (Il comportamento delle piastrine in ostetricia e in ginecologia). *Arch di ostet e ginec*, 1931, xxxviii, 697

Celentano reports the results of 327 platelet counts, 206 of which were made during pregnancy and the puerperium and 121 in various gynecological conditions. All of the counts were done according to the method of Téoumme.

A mild and inconstant diminution of the platelets was noted during the late months of normal pregnancy, and a more pronounced decrease in complicated pregnancies and puerperal infections. In gynecological conditions, a reduction was noted during the menstrual period and in hæmorrhagic diseases, acute inflammatory processes, and a few cases of carcinoma of the uterus. In cases of chronic inflammatory lesions and benign tumors the count was normal. Occasionally a transitory thrombocytosis occurred during the period of resolution of inflammatory processes and puerperal infections.

The author believes that his findings support the hypothesis that the platelets are concerned in some way in the defense of the organism against infective and toxic processes.

PETER A. ROSE, M D

Saidl, J. Leukæmia and Pregnancy (Leukæmie und Schwangerschaft). *Čas lek česk*, 1931, li, 949

The author reports two cases of leukæmia during pregnancy. In the first case, that of a para-ii thirty-five years of age, a diagnosis of myeloid leukæmia associated with a large splenic tumor had been made two years previously. After three treatments of the spleen with radium the blood findings showed considerable improvement, the neutrophilic leucocytes increasing from 34 to 55 per cent and the immature forms undergoing a corresponding decrease. After the third irradiation a five-month pregnancy was discovered. Daily elevations of the temperature led to X-ray examination of the lungs. As this revealed a fibrodestructive phthisis, interruption of the pregnancy was necessary to save the patient's life. Supravaginal amputation of the uterus was done by laparotomy. Hæmostasis was very difficult, but was finally accomplished with strychnon gauze. Except for phlebitis, recovery was uneventful. Three months later the blood findings showed considerable improvement, the patient had gained 7 kgm., the enlargement of the spleen had disappeared, and the temperature was normal.

The second case was that of a woman fifty-two years of age who came to the clinic in 1925 with great enlargement of the spleen. Hæmatological examina-

t n disclod a my loid l ukæmia The g n tal e am nati n a negative After t o r entg n a rad at on the pat ent dis ppear d f o ev n months When she r tu ned he was in the sixth month f p gnaney and he gene al c nd it on as very much ors Sh efused fu the t eatm nt by r d a t n and two months late at her hom was d l ed of a dead chld Aft r d l y aton bleeds g set n and d ath resulted

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Dodd G H B t i ri in P g ncy L bo nd th Pu pelum J Obi & Gy a B i f p 95 22 773

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H r s A c e J M D

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primiparæ After 1916 it increased In the period from 1923 to 1927 it ranged from 4.0 to 7.7 per cent

Among married tertiparæ from 1904 to 1916 it was between 4.7 and 9.0 per cent in the period from 1904 to 1916 It then increased each year until, in the period from 1923 to 1927 it was about 13 per cent

Among married quadriparæ and quintiparæ it was between 7 and 12 per cent in the period from 1904 to 1916 After this period it showed an annual increase, particularly from 1918 to 1920 In the last few years it was about 17 per cent

Among married sextiparæ and women who had borne more than 6 children it was fairly high and showed a slight annual increase even as early as 1904 From about 17 per cent in the period between 1904 and 1916 it increased to about 25 per cent in the last few years

Among unmarried primiparæ it was comparatively constant between 2.3 and 4.6 per cent in the period from 1904 to 1916, but thereafter showed a marked increase to about 11 per cent in the period between 1924 and 1927

Among unmarried multiparæ the incidence of abortion was 6 per cent in the period from 1904 to 1916 and 22 per cent in the period from 1922 to 1927

Among married women who had already passed through 2 pregnancies, criminal abortion appeared to be an important cause of miscarriage as early as 1904 It was practiced more frequently each year and more often the greater the number of children the patient had borne previously Married secundiparæ did not begin to practice criminal abortion until about 1916, and married primiparæ did not begin to practice it until about 1924

In the last few years 10 per cent of the miscarriages of married primiparæ, 50 per cent of those of married secundiparæ, and from 80 to 90 per cent of those of married tertiparæ and multiparæ and unmarried women were due to criminal abortion

It is probable that criminal abortion could more often be performed without risk of fever when the pregnancy had passed the third month

Women who have once practiced criminal abortion are apparently apt to do so again

Of the married secundiparæ with miscarriages, 7 per cent has aborted previously The incidence of repeated abortion rapidly increases in proportion to the number of previous pregnancies Of the sextiparæ and other multiparæ whose histories were reviewed, 48 per cent had aborted before, and of these, 18 per cent had aborted more than once

In the material reviewed by the author there were only 3 cases of habitual abortion

The frequency of abortion increased in all age groups except those above forty years

The increase in the frequency of abortion among married primiparæ was highest between the ages of twenty six and thirty five years In unmarried multiparæ the greatest increase occurred in women under twenty five years of age

The average age of married primiparæ with miscarriage was about two or three years higher than that of married primiparæ giving birth to living children In the other groups of married and unmarried women there appeared to be no great difference in the average ages of delivered and aborting women

Of the total number of abortions, 1,590 occurred in the second or third month, 316 in the fourth or fifth month, and 141 in the sixth or seventh month

In the last few years there was a relative decrease of abortion in the later stages of pregnancy In the cases of older women the number of abortions in the fourth to the seventh months of pregnancy also diminished somewhat in comparison to earlier abortions

True spontaneous abortion is probably more common after the end of the third month of pregnancy than earlier

Unmarried women were apparently practicing criminal abortion at an earlier stage of pregnancy during the last few years than previously

Of the total number of abortions at the hospital, 22.7 per cent (+0.9) were accompanied by fever (initial rectal temperature above 38 degrees C)

The frequency of febrile abortion was about 21 per cent in married women and about 26 per cent in unmarried women

Almost all of the febrile abortions were to a high degree open to the suspicion that they were criminal Fever occurred in only 3 or 4 per cent of the abortions of married primiparæ but in from 20 to 25 per cent of the total abortions in all of the other groups

Apparently a large percentage of the afebrile abortions were also criminal

There was no conclusive statistical difference in the frequency of febrile abortion in different age groups of married and unmarried women

It seems likely that after the age of forty years febrile abortion is somewhat rarer than in other age groups

For the past few years there has been a certain tendency toward an increase in the frequency of febrile abortion below the age of thirty one years

Febrile abortions in married women have shown some tendency to increase during the last few years but it cannot be claimed with certainty that this tendency varies according to the occupations of the husbands

The frequency of febrile abortion appears to be about the same in the different occupations in the cases of both married and unmarried women

It is possible that criminal abortion can be practiced with less risk of fever when the pregnancy has passed the third month

Only 10 per cent of the abortions in unmarried women occurred in patients with a comparatively good social position The others occurred in women belonging to the lowest and worst paid classes

Abortion appears to be practiced most frequently by factory workers under twenty years of age

by yeasts. The smears did not give complete evidence of the bacterial content of the vaginal secretion as cultures yielded streptococci and other organisms when the smears showed only Doederlein's bacilli.

Correlation of the smears and the clinical course of the puerperium indicated that a vaginal flora deviating from what had been regarded as the ideal does not predispose to puerperal sepsis. However, although many unknown factors are probably involved, the incidence of sepsis was considerably higher after instrumental interference than after spontaneous labor.

In a study of the reaction of the upper vagina in relation to the flora it was found that in clinically normal women the secretions were strongly acid, regardless of the presence of Doederlein's bacilli in the great majority of the cases. The acidity of the vagina had little or no inhibiting effect on the growth of streptococci. However, the latter were considered to be of low or no pathogenicity. No relation could be observed between the reaction of the upper vagina in pregnancy in these women and the incidence of puerperal sepsis.

The author next made bacteriological studies by anaerobic methods in the cases of 200 women, employing broth or glucose broth as primary media in 142 cases, and T-broth, serum, hydroclic broth, or ordinary broth in 58 cases. Streptococci were isolated in 35 per cent and colon bacilli in 5 per cent. No hæmolytic streptococci were obtained from the vagina or cervix of these women. In his detailed study of 155 strains of non-hæmolytic streptococci (Holman's classification), Logan found that more than 20 per cent were of the enterococcus type and those of other types occurred in smaller percentages.

Of 134 women followed, 7 per cent had a septic puerperium. In a bacteriological study made in the cases of these women it was found that the presence of non-hæmolytic streptococci or colon bacilli in the upper vagina and cervix during pregnancy is of no importance in the development of puerperal sepsis.

In the cases of 26 women bacteriological examination of the cervix at the beginning of labor and during the puerperium revealed the colon bacillus in 19 per cent and streptococci of the non-hæmolytic or viridans type in 35 per cent. Although the streptococci seemed to have little relation to the development of puerperal sepsis, colon bacilli appeared to play a part in the production of this condition. The presence of these organisms in the uterus during the puerperium may be considered normal. In the 26 cases cited there was evidence that massive introduction of these organisms into the uterus sufficient to cause puerperal sepsis might occur in complicated labors and operative deliveries. It was observed that uterine sepsis could be maintained completely by an organism of one type while the blood stream in the same case was invaded by an organism of another type, also that flora of the uterus during the puerperium might be the same when clinical sepsis was absent as when clinical sepsis was present.

The author emphasizes that many factors are involved in the introduction of puerperal sepsis, and that it is only when one factor is so predominant as to overshadow all others, as in epidemics due to hæmolytic streptococci, that the problem can be simplified. Therefore, at the present time it is still impossible to determine with any certainty why one woman develops puerperal sepsis while another does not.

Logan agrees with the view that the time of danger from the introduction of organisms into the uterus from without is during labor and the first few days after labor.

A F LASH, M D

NEWBORN

Liebmann, S. Some Interesting Fetal Birth Injuries and Their Treatment (Über einige interessante fetale Geburtsverletzungen und ihre Behandlung). *Monatsschr f Geburtsh u Gynack*, 1937, lxxxv, 14.

The author reports on the injuries occurring in 16,801 births at the second gynecological clinic in Budapest and their treatment. He divides the injuries into 2 groups: those occurring in spontaneous deliveries and those occurring in operative deliveries.

Injuries to the skull, the bony impressions which are usually due to disproportion between the head of the child and the maternal pelvis, are considered first. As a rule the cause is a narrow pelvis. The depressed area is located most commonly in the anterior part of the parietal bone, and less commonly in the frontal or temporal bones. Because of the elasticity of the fetal bones, the impressions seldom cause intracranial injury. Correction of the defect is done for cosmetic reasons rather than because of any danger. Frequently the defect disappears spontaneously in the course of time. An attempt may be made to fill out the impression by pressure on the surrounding areas, by massage, or by operation.

Of the cases at the Budapest clinic, an injury of this type occurred in 12. In 7 operative correction was done, the depressed fragment being elevated subcutaneously under general anesthesia. In 4 cases the depression was so slight that correction was unnecessary, and in 1 case almost complete disappearance of the defect occurred spontaneously in ten days. Eight of the children were re-examined subsequently or followed up by letter. In the 7 who survived, the impression injury had done no harm whatever.

A much greater menace to the child are fractures occurring during birth. Fracture of the spine is nearly always fatal. It usually occurs during extraction in cases of pelvic presentation and involves the cervical vertebrae. Of 453 infants in pelvic presentation, 107 were born dead and 9 of the latter had a fracture of the spine. Fractures of the bones of the extremities are not so dangerous as they heal well. This is true also of fractures of the shoulder and pelvic girdles when there are no serious

In 1930 the stillbirth rate reached 41 per 1,000 births. Closely related to it is the mortality during the first four weeks of life. It is estimated that 20 per cent of the total stillbirth mortality of lying-in hospitals is directly attributable to birth traumata. The factors most commonly responsible for death of the fetus are breech and occiput-posterior presentations.

Because of the high proportion of abnormal obstetrical cases in maternity hospitals, the stillbirth rate in the majority of these institutions is at least double the national stillbirth rate. The East End Maternity Hospital, London, reports a stillbirth rate of 27 per 1,000 births and 3.5 per 1,000 normal labors. The deaths of newborn infants average 13 per 1,000 normal labors.

A systematic study of birth injuries confirms the view that intranatal death is by no means limited to difficult obstetrical conditions. The great majority of fetal deaths in cases of uncomplicated labor are associated with breech presentation and forceps delivery.

While there is not much evidence with regard to the proportion of deaths of newborn infants which should be attributed to the effects of labor, deaths proved by autopsy to have been due to asphyxia and atelectasis are attributable to the birth process. Of a series of 800 deaths of newborn infants, 70.6 per cent occurred during the first week, 19.4 per cent

during the second week, 7.3 per cent during the third week, and 2.7 per cent during the fourth week. Next to asphyxia, intracranial hemorrhage is the most frequent cause of stillbirths and the deaths of newborn infants.

A certain number of infants come to birth in such a delicate state that they sustain a fatal injury from slight trauma. Of this type are premature infants.

The medical attendant at the confinement can be charged with only a limited responsibility for the fetal mortality of birth as no degree of medical or nursing skill can make birth anything but a rough passage for the child. The problem of the prevention of stillbirths and the deaths of newborn infants is difficult to solve. Syphilis and the toxæmias respond to constitutional treatment, but even under the most skillful management placenta prævia is associated with a high fetal mortality. The management of breech labors and the use of forceps must be improved. Another factor of importance in infant mortality at birth is the extreme liability of the fetus to shock and cerebral injury.

The author suggests increasing the resistance of the child to the stress of birth. Although the size or weight of the child *in utero* cannot be influenced, he believes that its power to resist traumatic influences might be increased by placing the mother on a diet with a carefully balanced vitamin content.

THEODORE J. MORRIS, M.D.

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

Lazarus J A and Elenberg A A Tumors of the Adrenal Gland A Report of Two Cases of Paraganglioma of the Adrenal Gland J U 1931 1

The two cases of paraganglioma of the adrenal gland reported by the authors were those of women 18 and 21 years of age. In one the tumor was not discovered until autopsy as the clinical picture was dominated by a carcinoma of the thyroid. In the other the roentgenography led to a diagnosis of adrenal cyst.

The authors describe and classify adrenal tumors on the basis of a review of the literature and conclude that the most important of these rare neoplasms arise from the epithelial structure of the gland.

The outstanding features of tumors involving the adrenal cortex are the sex changes seen in males and in female children. Tumors arising from the adrenal medulla bear a close resemblance to the sympathetic system. The degree of their malignancy varies greatly with the state of maturity of the medullary cells. Paraganglioma composed almost entirely of the chromaffin cells of the medulla is usually benign and occurs only in adults.

Do AL A Hays M.D.

Continued on inside back cover

The great frequency of pathological conditions associated with hemodialysis is well known. Many types of operative procedures have been used in their treatment—symphysiotomy, hemipelvectomy, pyelonephrectomy, and plastic operations.

The str l i n g f a t u e of the p a t h l e i c l p t u r e
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e w e d b y G i e r r e z w a s t h e d e n e o f i n t e r s t a l
g l r u l a r a n d t u b u l r p h n s f o n d e s p e c i a l l y
t u t o p s y G u t e r r e b e l e t h a t u s h a e s
s h u l d b c l a s s f i d a c a o f h o s b o e k i d n e y
d i s e a s e a n e w e n t y

The symptom is extremely rare but the triad of pain in the epigastric or umbilical region, history of chronic constipation, a social or not with gastric intestinal disorders and urinary disturbances with early signs of chronic nephritis is called the horse shoe syndrome a dwaprest n twenty so f the author's twenty five cases

In the diaphragm is a complete examination of the urinary tract is essential. The plain film will reveal the condition of only a few cases. The most valuable prologophic findings are (1) stones on the station of the pelvis (2) stones on the calyces particularly the lower (3) an unusual calyx

tion and an elongated bizarre shape of the pelvis and (4) a peculiar position of the ureters.

Gutierrez presents an entirely new pyelographic correlation on hip which he calls the typical horseshoe kidney pyelographic triangle with a minimum of angle. This was seen in eighteen of the nineteen cases reviewed in which the diagnosis was made during life. In the normal kidney the minimum lower angle is about 90 degrees whereas in the horseshoe kidney it averages about 60 degrees.

ANDREW McNALLY M.D.

With to tel f Con id rati na Reg d ng the
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Pyelitis occurring in the course of acute gonorrheal urethritis is not rare. It is nearly always the result of an ascending infection. Sometimes streptococci and taphylococci are associated with the gonococcus in the process.

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the urine (as demonstrated by the invest gatio
Keyser Ebste n and Nicola er) (3) r tent
14) stone formation In the absence of te
the precipitated salts are e creted as urin r sa d

The author cites the case of a young man who developed symptoms and signs of posterior urethral stricture 10 days after the first symptoms of pyelitis. He had an attack of enterocolic with harn t n which recurred at intervals for 6 days. A rapid erythrocytic passage of a stone was pediculated. An analysis of the ureter or renal pelvis suggested an x-ray examination was made. The x-ray examination revealed angulation sites and fistula on the left ureter at the level of the urethral meatus. The contour of the stone indicated that it had formed at that point.

ALBERT F D G o r M D

Munger A D Acute Hem rth gl Cyst of the
Kidney J L 1 193 xcv 73

Munger states that the term hemorrhagic cyst of the kidney is a misnomer as the lesions to which it is applied are cysts of various types; to which hemorrhage has occurred.

He repo is a case ith symptoms of sudden onset
A diagnosis is tr re l tumor evit ntly cy t w
m de l ph tomy wa s ll ed by u enif l
ec ry Pathol gical xami ation dsl sed a cy t
f lymph gen c nign to whi h hem rrbag b d

occurred Munger believes that these cysts are relatively rare and that they cause no distinct syndrome. The treatment is surgical.

DONALD K. HIBBS, M.D.

Boeckel, A., and Franck, A. A General Study of Ureteropyelography and Its Results in 575 Cases (Étude générale de l'ureteropvélographie et de ses résultats d'après 575 cas) *J. d'urologie méd. et chir.*, 1931, xxxii, 448

The 575 cases in which the authors made ureteropyelographic studies included cases of pyelitis with distention, hydronephrosis, pyonephrosis, lithiasis of the kidney and ureter, urinary fistula, ptosis and ectopia of the kidney, tumors of the kidney, cystic and polycystic kidney, tuberculosis of the kidney, and diseases and anomalies of the ureters. The findings in these various conditions are reported in detail and in many instances are shown with roentgenograms.

The authors conclude that ureteropyelography is of great aid in the diagnosis of many surgical diseases of the kidney and is absolutely indispensable in the diagnosis of others, such as small and medium-sized hydronephroses, stones of the kidney and ureter, various diseases of the ureter, and particularly malformations of the kidney and ureter. In addition, it is of great value to the surgeon as a guide to treatment. AUDREY GOSS MORGAN, M.D.

Young, H. H. A Plastic Operation to Cure Obstructions to the Ureter Produced by Aberrant Blood Vessels Without Ligating the Vessels or Transplanting the Ureters. *Surg., Gynec. & Obst.*, 1932, liv, 26

Obstruction at or near the ureteropelvic junction is not infrequently caused by vessels which run from the great vessels to the lower pole of the kidney. Most of the treatments advised heretofore were directed toward removal of the obstruction by division and ligation of the blood vessels. However, division of the vessel to the lower pole of the kidney often leads to definite impairment and sometimes to atrophy or even necrosis of the kidney. Quinby therefore cuts the ureter and transplants it to another portion of the renal pelvis.

Young reports two cases in which he eliminated such an obstruction by plastic repair without ligating the vessels or transplanting the ureter. The technique is described in detail and shown in numerous illustrations. HARRY W. PLAGEMEYER, M.D.

Dourmashkin, R. L. The Basis for the Management of Ureteral Calculi. *J. Am. M. Ass.*, 1932, xcvi, 276

This article is based on a study of 365 cases of ureteral calculi. The author discusses instrumental and intravenous pyelography, treatment, accidents and complications of cystoscopic manipulations, and the indications for operation.

In a review of 1,001 cases of ureteral calculi treated at the Mayo Clinic, Bumpus and Thompson

reported that the calculi were removed surgically in 480 cases. Of a series of 606 cases treated at the Crowell Clinic and reviewed by Squires, the stones were removed by cystoscopic manipulations in 87.13 per cent.

It is well known that a stone may be lodged in a ureter for a considerable length of time without seriously interfering with kidney drainage and without producing infection of the renal pelvis or the changes resulting in hydronephrosis or chronic pyelonephritis. The only signs of damage may be a slight diminution in the dye output, the presence of a few leucocytes in the urine, and varying degrees of pelvic retention. In the absence of acute infection of the kidney, the occurrence of marked hydronephrotic changes associated with extensive destruction of the renal parenchyma is rare during the first year of the condition.

The routine injection of opaque solutions into the renal pelvis in the presence of ureteral obstruction is dangerous. Unless complete drainage is assured, it should be avoided in cases which present no diagnostic problem as it frequently causes severe infection. With the introduction of intravenous pyelography, a practically harmless method of obtaining information regarding changes taking place above the obstructing stone became available. Intravenous pyelography should be used in every case of stone impaction, but is of greatest value in cases in which it is impossible to pass the obstruction with a ureteral catheter. It has been shown that in the great majority of cases of chronic calculous obstruction even of the apparently hopeless type renal drainage is maintained. However, the temporary cessation of renal function so frequently noted in cases of acute retention resulting from complete block by a ureteral stone may result in total absence of the dye shadow on the affected side. In some instances all that is noted is a rim of widely dilated calyces the dye penetrating into the spaces immediately adjoining the renal parenchyma but failing to delineate the renal pelvis and the ureter distended under pressure with retained urine. The temporary nature of such conditions should be constantly borne in mind lest they be mistaken for serious renal destruction. As a rule an indwelling catheter draining off the urine trapped above the obstructing calculus will quickly restore the function of the kidney.

Among the factors safeguarding the kidney in cases of calculous obstruction of the ureter are grooves and irregular channeling of the stones and the change in position of a floating stone which permit a certain amount of renal drainage. Another factor is what the author calls "renal hibernation," a temporary stoppage of renal activity resulting from complete ureteral obstruction which is not accompanied by destructive changes in the kidney and is followed by quick restoration of normal renal function after removal of the obstructing agent. In such cases the kidney stops excreting water as well as solids for a considerable length of

GENITAL ORGANS

Chwalla, R. Experiences Regarding the Operative Treatment of Prostatic Hypertrophy (Erfahrungen ueber die operative Behandlung der Prostatahypertrophie) *Ztschr f urol Chir*, 1931, *xxxi*, 245

This article is based on 1,280 cases of prostatic hypertrophy treated in the period from 1913 to 1930. Suprapubic prostatectomy was done in only 370. Other operations included a Voelcker ischio-rectal intervention in 1 case, the formation of a suprapubic fistula in 75 cases, cystolithotomy in 58 cases, and partial suprapubic prostatectomy in 2 cases. No perineal prostatectomies were done. The fact that operation was performed so infrequently is explained by the character of the cases. The hospital is situated on the outskirts of a city and near an old peoples' home. Therefore many of the patients are sent to it from the central clinics on their way to the old peoples' home and are inoperable when they are admitted. In 44 per cent of the cases there was complete urinary obstruction, and in only 41 per cent was the condition in the first stage of the Guyon classification.

The diagnosis can frequently be made only with the cystoscope, and at times only by urethroscopic examination of the posterior urethra. Cystoscopic examination may be dispensed with only when the urine is clear and the findings of rectal examination are absolutely positive.

In 12 per cent of the cases there are bladder stones, and in 5 per cent the prostatic hypertrophy is associated with stricture. Epididymitis is no more frequent after operation than in cases not treated surgically.

For permanent drainage, the Tiemann catheter is less satisfactory than the ordinary Nelaton catheter because its bent-up tip causes irritation.

The danger of postoperative hemorrhage is decreased by preliminary treatment with calcium and intravenous injections of afeinil.

The author operates under spinal anaesthesia induced with 1 c cm. of a 5 per cent tropocain solution. Of the 370 cases in which prostatectomy was done the anaesthesia of the abdominal wall induced by this method was incomplete in only 18. Collapse occurred in 3 cases. The bladder is filled with from 150 to 200 c cm. of air and incised between 2 tension sutures. Counter elevation from the rectum is unnecessary. Enucleation is effected with the index finger introduced through the bladder opening. In cases of bladder injury or perforation of the surgical capsule, perineal drainage should be established. Since 1918, the author has tamponed the prostatic fossa after the enucleation. In addition, he establishes external drainage with an indwelling catheter and a suprapubic drain. Bladder tamponade with suture of the edges of the bladder incision to the rectus muscles was necessary in 11 cases. Of the 11 patients, only 6 survived. The gauze strip in the prostatic fossa is removed on the seventh postoperative day, and the bladder tube on the ninth day.

The abdominal wall is sutured in 3 layers. A strip of gauze is always placed in the space of Retzius. The bladder opening usually closes in three weeks. Only then is the patient allowed to be up.

In 50 cases treated in the period from 1913 to 1919 the mortality was 24 per cent, and in 320 cases treated in the period from 1920 to 1930 it was 9 per cent. The mortality was not lowered by operating in 2 stages. POSNER (Z)

McCarthy, J. F., and Ritter, J. S. The Seminal Vesicles. *J Am M Ass*, 1932, *xcviii*, 687

The status of the seminal vesicle as a factor in disease still remains to be determined. An understanding of the anatomy of the seminal tract is important. The ejaculatory ducts average 15 mm. in length and 1.9 mm. in circumference. As they extend backward through the verumontanum and prostate, the lumen becomes larger until their division into the duct of the seminal vesicle and ampulla of the vas, where the circumference is 4.5 mm. The ejaculatory ducts dip sharply through the verumontanum at an angle of about 45 degrees to the urethral floor. After first diverging, they converge until there is only a thin septum of tissue between them. This wall is easily perforated even with soft, flexible instruments. The ducts then run parallel to the prostate.

To facilitate catheterization of the ejaculatory ducts, an instrument which will direct the catheter along the course of the ejaculatory duct through the verumontanum and prostate is necessary. The McCarthy ejaculatory duct catheter carrier with a spring wheel deflector was devised for this purpose. A soft, flexible ureteral catheter is introduced into the ejaculatory duct and directed toward the lateral wall of the duct, which is less easily penetrated than the thin, friable septum between the two ducts. After the catheter has been passed 2.5 cm. or more and its eyes are within the ejaculatory duct uncontaminated seminal secretion can be obtained. If no secretion appears after a few minutes, 1 c cm. of sterile saline solution may be injected to dilute the viscid seminal secretion so that it will flow through the catheter. If vesiculography is desired, 5 c cm. of a radiopaque solution are injected. After the injection of 1.5 c cm. of this solution, the medium is seen returning from the seminal vesicles about the catheter at the ejaculatory duct orifices. The full 5 c cm. should be injected to insure filling of the vesicle. The bladder is then completely emptied and 100 c cm. of air are injected for an aerogram. For injection of the vesicles, the authors prefer sodium iodide colored with indigocarmine or methylene blue.

In the cases of fifty subjects in which the authors studied the seminal vesicles by the procedure described no appreciable changes in the vesiculograms were noted between the ages of twenty-one and fifty-six years. Fourteen vesiculograms were normal as judged from the definitely outlined individual sacculi. The ejaculatory ducts, ampulla

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SURGERY OF THE BONES, JOINTS, MUSCLES, TENDONS

CONDITIONS OF THE BONES, JOINTS, MUSCLES, TENDONS, ETC

Hoffmeister, W. Fibrosarcomatous Osteitis (Ostitis fibrosa-Sarkom) *Zentralbl f Chir*, 1931, p 2641

In the region of a bone sarcoma the bone shows the changes peculiar to osteitis fibrosa. Therefore a specimen taken for microscopic study may include only tissue from the zone involved by the relatively benign condition. The author reports four cases in which microscopic examination disclosed true sarcoma and osteitis fibrosa side by side. Therefore in the treatment of doubtful cases, especially early cases in which even the roentgenogram fails to reveal the nature of the condition, extensive operative removal of the affected area is to be recommended. When possible, this should be done subperiosteally as the periosteal tube remaining is able to restore the lost section of bone completely. Resection may be done even when the growth has broken through the bone if the soft tissues have not been invaded, but under these circumstances a bone graft must be implanted. When the growth has broken into and diffusely invaded the soft tissues there is no doubt as to its sarcomatous nature and only amputation should be considered.

In the discussion of this report, SEIFERT (Wuerzburg) stated that claims of cure of sarcoma by roentgen irradiation which are based only on clinical observations should be accepted with caution. The clinical disappearance of a sarcoma under roentgen irradiation may be due to a process of shrinkage in which the structure of the sarcoma is affected scarcely at all. As an illustration, Seifert cited a case of round-cell sarcoma of the upper jaw. This tumor disappeared in three days following roentgen irradiation, but two weeks later had returned to its former size. When it was again subjected to irradiation it shrank down to a tiny remnant within two or three days, but biopsy done at the end of that time showed the round-celled structure of the neoplasm to be still unchanged except perhaps for slightly more destruction of the nuclei. In contrast to this case was one in which a perivascular sarcoma of the clavicle diagnosed by biopsy regressed so completely within three weeks after roentgen irradiation with one-half of a full dose given in two treatments three days apart that its complete removal by operation was possible and was followed by undisturbed healing. Microscopic examination of the specimen showed no sign of sarcomatous tissue and only a newly formed, rather oedematous cicatricial tissue surrounding rests of the clavicle, numerous metaplastic islands of bone, small foci of round cells, and a little iron containing pigment.

The difference in the effects of the roentgen irradiation in these two cases cannot be explained.

LEBSCHKE (Munich) recommended more frequent resort to biopsy for the more positive recognition of sarcoma as the general clinical picture, the local findings, and even the roentgen findings may not be sufficiently definite. He cited three cases with the typical signs, respectively, of an advanced central sarcoma of the femur, a peripheral sarcoma of the fibula, and a beginning tumor of the head of the tibia in which, on biopsy, the condition was found to be osteitis aluminosa in the first case, osteitis fibrosa in the second, and periostitis in the third.

FRIEDRICH (Erlangen) said that malignant, infiltrating sarcomata of the bones cannot be distinguished satisfactorily in the roentgenogram from benign osseous tumors which break through the cortex of the bone because of the internal pressure resulting from their expansion. He cited three cases in which the roentgen findings suggested advanced sarcoma because extensive areas of the cortex had been destroyed, but in two of which histological examination after amputation showed the neoplasm to be a simple enchondroma. In one of these cases the patient refused to allow amputation. Friedrich called attention to the fact that so-called cures of sarcoma from roentgen irradiation alone are uncertain because of the lack of a histological diagnosis whereas in surgical statistics there is no uncertainty as the diagnosis is confirmed at operation. Therefore surgical and roentgen statistics can be compared only with reservations.

ENDERLEN (Heidelberg) stated that when operation is preceded by irradiation necrosis of the skin may occur.

ORTH (Homburg i d Pfalz) discussed the relationship between injury and the development of sarcoma and emphasized the importance of removing larger specimens at biopsy, which may be done by electrocoagulation.

HUGEL (Landau) reported two cases of melanoma-sarcoma treated by operation without irradiation. In both, death occurred within one year, whereas in two others of the same character (melanosarcoma of the side of the neck) in which operation was done and the resulting scar was subjected to postoperative radium irradiation the patients were still alive six and seven years respectively after the operation. He recommended especially, in addition to local irradiation, irradiation of the spleen, as this organ may be regarded as the central cause of diffuse metastases. In one of Hugel's fatal cases a metastatic nodule was found in the spleen.

VON REDWITZ (Bonn) called attention to the fact that according to the studies of his assistant,

Hummelmann the injection of the hormone of the parathyroid glands in local and general osteitis fibrosa is followed by a typical change in the curve of the serum calcium. In a case of osteitis fibrosa in which he exposed the thyroid gland he discovered an adenoma of the parathyroid gland the size of a cherry at the right lower pole of the thyroid. He has confirmed Siefert's observation that in some cases it actually causes a reduction in the size of a sarcoma with uttering any influence whatever on the histological picture or the occurrence of metastases.

KOENIG (Wurzburg) emphasized that the treatment of sarcoma by roentgen irradiation alone has been largely repudiated and that extensive operation is removal is still justified even if it can be expected to be only palliative. Removal of the sarcomatous tumor or of part of it before and after roentgen irradiation in all cases on knowledge of the class of tumors which are called sarcoma.

MAX BUDDÉ (Z)

Platt II Some Observations on Bone Tumors
P S M d L d 93 xx 71

The author reviews 100 cases of bone tumors including bone metastases of malignant tumor and sarcoma.

He states that the term "osteoma" should be applied only to tumors which remain predominantly cartilaginous throughout the life history. Sarcomas occur most frequently at the ends of the major long bones and in the pelvis. Some of them grow widely and others are apical. The osteogenic origin of the latter is histologically characteristic. The solitary chondroma of special interest to the surgeon when it attains an enormous size becomes a sarcoma. The histological transformation of a benign growth does not necessarily mean malignancy.

The author reports 4 cases of osteoma. In the first the nerve was injured and another the tumor invaded the shaft of the tibia.

There is ample evidence that an osteosarcoma may develop at the site of a chondroma or exostosis. The American Sarcoma Registry includes specimens referred by Kolod. Phenomena of other sarcomas. The John Hopkins collection contains a group of tumors which are referred to as "giant cell" by Bloodgood. Some of these are bone but are now believed to be chondrosarcoma arising in pre-existing benign cartilaginous growths. The three reports are a plan of the latter type.

The chondroma is characterized by its small size, multiple sites, and the fact that it occurs most frequently in the long bones of the hand and foot. It originates early in childhood. There are two basic types: (1) the solid tumor and (2) the chondromatous cyst. The histological picture is more commonly singular and develops slowly. The treatment of both types of tumors is uretic cauterization and the trend is toward amputation.

For difficult cases of the long bones of the pelvis the author prefers the method of en bloc

tumor. He includes in his article a table showing the resemblances and contrasts between the giant cell tumor, the solitary bone cyst, and the trochanteric sarcoma. In discussing the relationship of the giant cell tumor to the benign bone cyst he says that it is now recognized that the majority of the neoplasms occur before the age of fifteen years and high as described as giant cell tumors were cysts. He is a case of cystic sarcoma of the femur in which although the macroscopic and microscopic appearance of the contents suggested a giant cell tumor the neoplasia occurred in the greater center a site where benign cysts are common and giant cell tumors are rare. A diagnosis of osteitis fibrosa was made.

In certain places cysts may be treated by partial amputation but in cases of giant cell tumor complete eradication of the lesion is imperative at the earliest moment. Glickler and Coe's conclusion from their studies that the prevalence of giant cell tumor behavior is a main suggestion of malignancy. The behavior is due to the change in the original tumor but to the superimposed infection of the sarcoma. This suggestion of virus is liable to occur only in neglected cases. The author reviews a series of cases of giant cell tumor in which uretic cure and cauterization are followed by cure.

Notwithstanding the many dangers of the use of the established method of the time can Sarcoma Registry has been the object of a more accurate classification of bone sarcoma. The classification of the sarcoma is (1) the osteogenic sarcoma, (2) the chondrosarcoma of bone, (3) the embryonic sarcoma, (4) the embryonic sarcoma which is both chondrosarcoma and histologically a tumor, and (5) the extraosseous sarcoma. The author reports a case of the histological type of the bone sarcoma more rarely seen. The histological type of the bone sarcoma is the most common. The author reports a case of the histological type of the bone sarcoma. The author reports a case of the histological type of the bone sarcoma.

The treatment of osteogenic sarcoma of the long bones is amputation. The method of choice is Forrester's method of the bone. The bone is combined with the solitary metastatic carcinoma.

I. The treatment of osteogenic sarcoma of the long bones is amputation. The method of choice is Forrester's method of the bone. The bone is combined with the solitary metastatic carcinoma.

Of the cases of osteogenic sarcoma treated by the author amputation was done 14. One of the patients treated by amputation survived more than four years. One died between one and two years and one died less than a year after the operation.

The results of the treatment of osteogenic sarcoma of the long bones are good. The histological type of the bone sarcoma is the most common. The author reports a case of the histological type of the bone sarcoma. The author reports a case of the histological type of the bone sarcoma. The author reports a case of the histological type of the bone sarcoma.

of the thumb in which the patient was alive four years and three months after amputation

The article is illustrated and supplemented by a bibliography

ROBERT V. FUSTON, M.D.

Smith, M. A Study of 102 Cases of Atrophic Arthritis I Introduction II Constitutional Defects III Etiological Factors *New England J Med*, 1932, cccvi, 103, 160, 211

In these articles the author's purpose is to discuss particularly the non-arthritic aspects of atrophic arthritis. He classifies arthropathies into the following 4 groups: (1) primary inflammatory arthropathies, (2) degenerative arthropathies, (3) tuberculous arthritis, and (4) traumatic arthritis.

In the first article he discusses the habitus, complexion, occupation, and social status of the patient with atrophic arthritis, the subtypes of the condition, and the findings of laboratory studies.

In the article on constitutional defects he discusses the familial tendency toward atrophic arthritis, previous rheumatic fever and loss of weight, the prodromal period, the beginning of the joint symptoms and signs, the blood pressure, and the constitutional symptoms and signs of the condition. The latter include coldness of the extremities, purpuric areas, ischæmic crises, claudication, angiod attacks, susceptibility to blushing or paling, sclerosis of the radial arteries, fainting attacks, general pallor, recurring erythematous patches, numbness and tingling, exophthalmos, intermittent swelling, moistness of the extremities, excessive perspiration, abnormal dilatation of the pupils, fatigability, abnormal nervousness, chronic constipation, headaches, vertigo, eye manifestations, and genito-urinary symptoms.

In concluding this article Smith says that allergy does not seem to be a prerequisite of atrophic arthritis, in fact it appears to be the antithesis of the condition. He believes that atrophic arthritis should be regarded as a vascular or neurovascular disease and certainly not as infectious arthritis.

In the third article Smith states that the causes of atrophic arthritis cannot be determined by a simple statistical analysis. They are apparently so subtle and so diverse that each patient must be studied individually to determine the succession of events leading to the arthritic manifestations. It is rare that a single cause can be predicated with confidence. Smith believes that atrophic arthritis occurs in peculiarly constituted persons but states that the role of infection and of other factors which occur with an irregularity almost equal to that of infection is not to be minimized.

In an analysis of patients, Smith found that the causes other than infection may be divided into the following 3 groups: (1) profound emotional trauma, (2) physical trauma, and (3) a combination of emotional and physical trauma. However, in the majority of cases in which the condition follows emotional and physical trauma there is a complicating focal infection.

Smith discusses also the menopause in relation to the onset and type of arthritis.

From his study of the etiological factors in 102 cases of atrophic arthritis, he concludes that physical and emotional trauma occur with sufficient frequency in such cases to indicate that physiological strain and depletion play a definite role in the etiology of the condition. Cases in which the menopause may appear to be a causal factor have been found complicated by the presence of focal infection and the occurrence of emotional and physical trauma. Therefore the action of the menopause cannot be postulated entirely on the basis of a chronological relationship, the nature of the disease must also be taken into consideration.

PHILIP LEWIS, M.D.

Dejardin, L., and Bary, F. Traumatismes of the Carpus (Traumatismes du carpe) *Bruxelles-med*, 1931, vii, 165

The authors have repeated the studies of Destot and of Mouchet and Jeanne, using stereographic methods. Their description of the roentgenographic anatomy and physiology of the carpus is essentially that found in the books of Destot and Speed.

There are two joints in the wrist. The distal segment, consisting of the phalanges and distal row of carpal bones, articulates with the proximal row and the proximal row articulates with the lower end of the radius. The relations with the ulna are limited and unimportant. The proximal group of bones is remarkably flexible and acts as a meniscus between the radius and distal group, giving the wrist its great mobility.

A series of roentgenograms shows the position of the ossicles in various positions of the hand. Particularly important are extension, adduction, and abduction. When the hand is adducted (ulnar inclination), the body of the os magnum accompanies the distal row of carpal bones, but the head is displaced with the proximal row toward the radial side of the forearm. In this position marked separation occurs between the semilunar and scaphoid and these two bones no longer closely surround the head of the os magnum. When the hand is abducted (radial inclination), the scaphoid, semilunar and trapezium are brought close together. The scaphoid becomes vertical and its proximal surface is completely under the posterior lip of the radius. The semilunar tends to mount the dorsal surface of the head of the os magnum.

When the hand is extended at an angle of 45 degrees the semilunar exactly caps the head of the os magnum. In a fall in this position the semilunar is caught beneath the lower end of the radius. As a rule the latter is fractured. Less often the semilunar is crushed. Again, the head of the os magnum may be broken off the posterior lip of the semilunar. When the hand is extended 90 degrees, the scaphoid becomes vertical and in a fall it is found between the styloid of the radius and the ground. The fracture of the scaphoid occurs by exaggeration of

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muscles are both under tension. The common field of tension of the tibialis anticus and the tendo achillis occupies no less than one-fifth of the entire range of motion. In the flexors and extensors of the wrist the common field of tension occupies only one-twelfth of the entire range of motion. It is noteworthy that the common field of tension occurs where stability of the joint is essential. Where mobility of the joint is the principal requirement there is a common field of relaxation.

Most important in spastic contractures is the fact that the resistance of the contracted muscles is greatest in the terminal position when the insertion and origin are most approximated. Once this resistance is overcome, the spastic contracture yields more easily. This is in definite contrast to the shrinkage contractures, which obey Hooke's law of elasticity. When the resistance is overcome in spastic conditions, the contracture is not only relaxed, but often turned into the converse contracture.

In general, the muscles most prone to develop contractures are those controlling a holding position, such as the uni-articular muscles. It must be assumed that operative methods, which only crudely redistribute balance, can maintain a muscle equilibrium of such extreme lability with great difficulty.

Ischemic myositis is not a contraction, it is a passive state. When there is no involvement of the ulnar and median nerves, ischemic contracture develops strictly on the basis of the myositic changes in the forearm and finger flexors. First, a flexion contracture of the wrist and flexion of the phalangeal joints appear, and later the extension contracture of the metacarpophalangeal joints develops. The hyperextension in the metacarpophalangeal articulation does not necessarily indicate loss of interosseus action. However, paralysis of the ulnar nerve often complicates ischemic paralysis causing accentuation of the claw deformity. The factor of most importance is the flexion contracture of the wrist, as upon this all of the subsequent features of contracture are superimposed.

The hypertonic fixation contractures of early stages of joint affections are relatively easy to manage because under constant traction, they yield to resistance in much the same way as spastic contractures. The contractures are usually in the direction of the greater muscle power.

This theoretical discussion has less bearing on the detailed construction of the apparatus used than upon the management of contractures of the upper extremity. In the latter, preference should usually be given to the methods applying continuous elastic traction.

Conservative treatment persistently carried out gives better results than is ordinarily thought, particularly in ischemic contractures.

The author includes in his article illustrations of a number of splints for various types of contractures.

Tendon lengthening does not re-establish physiological conditions as it renders the muscle too short

for its tendon. However, in the upper extremity a great deal of adaptation is possible. In spastic paralysis it is sometimes desirable to decrease the muscle power.

Stripping operations on the forearm flexors and pronators are used chiefly in ischemic contractures and contractures due to spastic paralysis. The common head of the forearm flexors together with the humeral head and the pronator radii teres is stripped from the internal condyle of the humerus and displaced downward, with due regard to their innervation by branches of the median nerve.

Alcohol injections and motor nerve resections are occasionally used in the treatment of the strong intrinsic muscle contractures of arthritis and in spastic paralysis of the hand.

Osteotomy proximal to the metacarpal heads is sometimes done in claw-hand contractures.

Miotomy is performed only in very special cases, for instance, to overcome shrinkage contracture of the pronator quadratus muscle.

The release of contractures by any of these methods must be supplemented by rehabilitation methods.

ROBERT V. FURSTON, M.D.

Capener, N. Spondylolisthesis. *Brit J Surg*, 1932, vii, 374.

Kilian in 1854 applied the name "spondylolisthesis" to displacement of the fifth lumbar vertebra forward over the sacrum. This condition is of 2 types. In one, the entire fifth lumbar vertebra is displaced forward over the sacrum and, being itself intact, carries the fourth vertebra and all other vertebrae with it. In the other type there is a defect in the laminae posterior to the transverse processes which allows the body, transverse processes, and superior articular facets to slip forward and the spinous process and inferior facets to go backward.

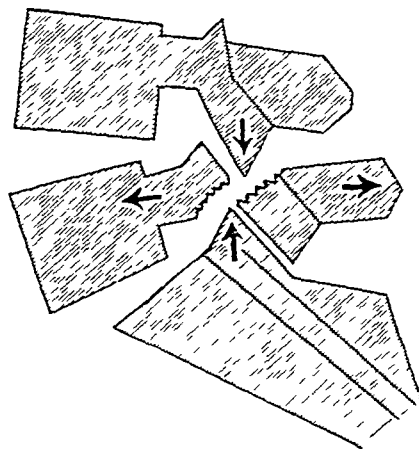


Fig 1. Diagrammatic lateral view of the lower spine to show the influence of sacral and lumbar wedges on the last lumbar vertebra.



Fig. A. Lateral view of the fifth lumbar vertebra showing the position of the sacrum and the position of the sacral foramina.

The author reports a study of 34 cases of the lumbosacral region.

It is pointed out that the lumbar vertebrae are the most frequent site of the origin of the sciatic nerve. The author notes that the lumbar vertebrae are the most frequent site of the origin of the sciatic nerve. The author notes that the lumbar vertebrae are the most frequent site of the origin of the sciatic nerve. The author notes that the lumbar vertebrae are the most frequent site of the origin of the sciatic nerve.

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fifth lumbar vertebra may be limited by the iliac crest and by the posterior iliac crest. When these factors fail the result of the lumbar vertebra will come to rest in the sacrum.

Spondylolisthesis is characterized clinically by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum. The position of the sacrum is characterized by the position of the sacrum.

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WILLIAM A. THURCLIFF, M.D.

Case of E. J. Scullin, 1913

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The position of the lumbar vertebra is characterized by the position of the lumbar vertebra. The position of the lumbar vertebra is characterized by the position of the lumbar vertebra. The position of the lumbar vertebra is characterized by the position of the lumbar vertebra. The position of the lumbar vertebra is characterized by the position of the lumbar vertebra. The position of the lumbar vertebra is characterized by the position of the lumbar vertebra.

tures, may be due to malnutrition during the first decade of life

Physiological spinal position is influenced by the following muscles

1 The superficial parallel bowstring muscles rectus abdominis, intercostals, and sacrospinalis muscles

2 The deep parallel bowstring muscles intertransversarii

3 The superficial transverse-traction-torsion muscles trapezius, latissimus dorsi, serratus anterior, and pectoralis major muscles

4 The deep torsion muscles semispinalis, multifidus, and long and short rotator muscles

The author discusses various reactions of the spine to deviations in these groups

ROBERT V FUSTON, M D

Viets, H R, and Clifford, M H Paraplegia Associated with Non-Tuberculous Kyphoscoliosis A Case Report and a Survey of the Literature *New England J Med*, 1932, ccvi, 55

The authors' conclusions are summarized as follows

1 Pressure paraplegia may occur as the direct result of angulation of the spinal cord secondary to severe kyphoscoliosis

2 The paraplegia usually appears without predisposing trauma after many years of scoliosis

3 The paralysis, spastic in type, is associated with sensory changes below the point of compression, sphincter weakness, and, rarely, pain

4 A block in the pathway of the spinal fluid may be demonstrated by pressure studies and the injection of lipiodol

5 Relief or even cure may follow hyperextension of the spine, but in most cases surgical decompression of the spinal cord at the point of maximum angulation of the spine is necessary

6 When appropriate treatment is given the prognosis is often good and sometimes is excellent

H EARLE CONWELL, M D

Coughlin, W T Spina Bifida *Ann Surg*, 1931, xciv, 982

The author reports twelve cases of spina bifida treated surgically. The patients ranged in age from sixteen hours to seven months. Children under four days old stood the operation best. The operative technique used by Coughlin is as follows

The child is placed on an angle table with the head down. This position is maintained throughout the operation and for at least six days afterward. An Eastman rubber dam is glued about the buttocks to prevent contamination. A transverse elliptical incision is made and the base of the sac carefully dissected, special care being taken to avoid severing nerves leaving the sac. When the cord is "open" and forms part of the wall of the sac, it may be restored to its bed. The raw surface is sterilized and an epithelium covering it is removed. Restoration of the bony canal lengthens the operation, increases

the shock, and is unnecessary. The patients do quite well after the turning of a flap of the lumbar fascia. The wound is closed transversely. When the defect is very large, an incision is made across the back parallel with the upper edge of the defect and the skin is dissected free and brought downward.

Of the twelve patients whose cases are reported, eight are living and well, three are dead, and one cannot be traced.

There were five myeloceles, four meningocele and three meningoceles. In eight cases cerebrospinal fluid was discharged.

In five cases sphincteric paralyses were present before the operation. There was no postoperative recovery of sphincteric action. In six cases paralysis of the extremities was present. In one case this was slightly improved and in one it was worse after the operation.

None of the children has developed hydrocephalus since the operation.

Operation is contra-indicated by total paralysis of the sphincters in the presence of myelocoele, but an open sac is not in itself a contra-indication to surgical treatment.

ROBERT V FUSTON, M D

Oliete Chavarría, A Roentgen Pictures of Vertebral Arthritis (Curios radiograficos del artrismo vertebral) *Prog de la clin*, Madrid, 1931, xix, 88r

Roentgen examination is an important aid in the diagnosis of vertebral disorders of the arthritic type. A knowledge of the finer anatomy of the vertebrae and their articulations is necessary for exact diagnosis and suitable treatment. Arthritis involving the smaller articulations may be present without gross lipping of the margins of the vertebral bodies.

In spondylosis deformans there is first a loss of elasticity of the intervertebral disks. Gradual changes then begin in the margins of the vertebrae. Of 200 cases of clinical lumbago and sciatica, roentgen signs of spondylosis deformans were found in 18 per cent. The subjects ranged in age from thirty to sixty years, but the majority were between forty and forty-nine years. During the war, spondylosis deformans was seen frequently. In many cases it was localized in the lumbar region.

Spondylosis deformans is characterized by deformity of the vertebral bodies and the formation of osteophytes. In ankylosing spondylosis there is no change in the form of the vertebral bodies or intervertebral disks. The pathological process is an ossification of the vertebral ligaments. The anterior longitudinal ligament is affected most frequently. The ossification is due to the formation of true bony tissue rather than to a deposit of calcium. Spondylosis deformans and ankylosing spondylosis are not considered true inflammations.

In contrast in this respect is intervertebral arthritis called "chronic rheumatism." This condition affects the articulations and usually involves nerve roots. It is most frequent in the lumbar region and consequently often causes symptoms of

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Today, because of the refinement of roentgen technique which prevents scattered radiation, a correct diagnosis should be possible from the roentgenogram as the findings are characteristic.

In cases with symptoms of compression of the cord laminectomy is indicated. The operation is associated with risk because of the copious bleeding which occurs when the process involves the vertebral arch. In cases without symptoms in which the hæmangioma is found accidentally, treatment with radium or the roentgen rays should be tried, particularly if the patient is a young woman.

Nathan, P. W. The Differential Diagnosis and the Treatment of Acute Osteomyelitis of the Upper End of the Femur Involving the Hip Joint. *Surg., Gynec. & Obst.*, 1932, lvi, 52.

Since 1908 Nathan has seen more than 200 cases of acute osteomyelitis of the upper end of the femur involving the hip joint. In that year he began a study of the condition to formulate more definite signs for the differential diagnosis and more definite indications for the treatment of the disease so that disability, deformities, long-continued suppuration, and chronic invalidism might at least be mitigated. He has had an excellent opportunity to compare the results obtained on the general services of large hospitals with those obtained when surgical measures were combined with adequate orthopedic measures.

In acute suppurative osteitis, operation is urgently required and often must be carried out at the earliest possible moment. An early diagnosis is therefore essential. In spite of the increasingly great refinements of roentgen technique, it is still impossible to demonstrate bone changes in any form of osteomyelitis during the early stages of the condition. The bone changes appear in the roentgenogram only when the disease is well advanced and those of the various forms of primary osteitis appear no earlier than those due supposedly to secondary invasion of the articulating bones from a primary synovial infection.

Synovial coxitis very frequently develops as a complication of general infection and in young children. According to Nathan's experience, the primary focus of all metastatic joint infections is in the bone marrow.

Nathan believes that the acute atrophy of the carpal and tarsal bones which is often found in gonorrhœal arthritis of the wrist and ankle is due to bone infection. Formerly, the use of plaster of-Paris spicas in the treatment nearly always resulted in relief of the characteristic intense pain which practically always prevented movement in the joint.

The author reports sixteen cases of coxitis. He states that in the great majority of his cases in which the condition developed as a complication or sequela of some other disease it occurred in association with mastoiditis. He has had 23 such cases.

He believes that all cases of acute coxitis developing as a complication or sequela of general infection

are cases of metastatic bone infection, and that the joint infection is always secondary to a lesion of bone.

He is of the opinion also that the more serious forms of what was formerly believed to be a malignant form of synovial coxitis of cryptogenetic origin are of the same nature, the primary focus being metaphyseal or epiphyseal.

Nathan advises treating all cases of acute coxitis conservatively by mechanical rather than surgical means. Only under exceptional circumstances has he been compelled to open and drain an abscess leading to the hip joint.

He believes that a staphylococcal infection of the hip joint, even when the disease has invaded the interior of the joint, is a much milder condition during early infancy than later in life, and that staphylococci are more frequently responsible for coxitis in childhood and adolescence than are streptococci or pneumococci.

Nathan divides cases of osteomyelitis into 2 classes: (1) the streptococcal and pneumococcal forms, and (2) the staphylococcal forms.

PHILIP LEWIS, M.D.

Bistolfi, S. A Contribution to the Study of Paracondylar and Para-Epicondylar Ossification of the Knee (Contributo allo studio delle ossificazioni traumatiche paracondiloidee e paraepicondiloidee del ginocchio). *Arch. ital. di chir.*, 1931, xxx, 233.

The author discusses traumatic paracondylar and para epicondylar ossification of the knee on the basis of seventy-eight cases which he reports in detail with roentgenograms.

The trauma causing such ossification is usually mild. It may be direct or indirect. In the direct contusion all of the tissues between the skin and the bony condyle are injured, an extravasation of blood probably ensues and the subsequent organization of the damaged tissue and blood may lead to bone formation by metaplasia or enchondral ossification. In rare cases a small spicule of cortex separated from the bone may form the nucleus of the new bone formation.

Torsion of the knee may result indirectly in trauma to the epicondylar regions through the action on the ligaments and tendons and the defensive contraction of the muscles inserted in these regions. Such torsion is usually a combination of three movements—abduction or adduction, flexion and rotation of the leg.

Injuries followed by ossification are most common on the medial side of the femoral condyles and over the points of attachment of the internal lateral ligaments or adductor muscles.

As many patients do not present themselves for examination until a few weeks after the injury, it is often necessary to differentiate the condition from fracture of the medial epicondyle. This may be difficult, but in cases of fracture the history usually indicates a less severe injury than that occurring in cases of distortion of the knee. The differential

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defo man In m st ca e th p th g esu e d utly the k y to the path gen of arthritis d f r mans As the h yal cartilage h n blood v s l the c ntral port on of th pat ll r cartilage noun hed m st poo ly It is her that th ch agen begin In ad an ed ca es a natural h alange d ry s man f sted by hypertem a in the n v l m m b ane around th patell A me hancalip pat llar j n v t man f st d by s a t n s t p ss at th s p o n t el p Th sy o t t m a v n a e n l e the ent e syno r l memb an nd becom exudat ve Cha acter st c f th an nte m itent hyd p o curr ng alt se e rti n l n s h a es f l o g du ation the c nd t n m y be m ch on and esult in th ken ng f th psul Th ma gual syn tis and th cken ng and the grad l fo mati n of o teoca tilaginous d po t t h dg of th p t l l a r p ent an un u c sult d cy towa d healing W th th chang the o d u s b e m e s a thriti s d f m ns Th fissu l d g r t on f th ca t l g neve beals w th h yal t l g and is n ve f l l ed by g danat m cal es h Th p t n t ompla n s f st of cr ckng of the k e e d lat f d a e d ndu an e pan n the k e e f p o l ng d t t ng w a k n f the qu d c p s p a m n d e p l l n of the kn and st l n In m l d a es th t r a tment c n ts f the av d nce f ve and unu ual exe t n and n mod cat e c s n m est nd th t mpo ry p p i c t n f a e s t t the kn j n t f o t h s l op at n s t b ons d d The perat n d ated n f th d a ed pat a d l p p g f f th r t s f om th dg f the pat lla In all f th te a e whch Sic ky old t t d u g lly th p t on wa follo d by mp m t

Fan d th t L a w u c n s d d r m al f th p t l l ca t l age an ly p at n n thet atm t f a th t s d f r man l th t m y d ated nly h n a r r t t eatm t h a f a l d d th da g of at phy f the qu d n p f m l a k f fun t n It is t a d e a t d n th cases f p t n t s f d v n c d g E b p t c u l l car ful w th r g d t pe at n s s h b the d t n a q l f t aum He t tes th t f j n t bod s n th t s d f m n n t n th m l nd at f perat th gcal m l s n ry nly he th y ca ym p toms E H M (2)

SURGERY OF THE BONES JOINTS MUSCLES TENDONS ETC

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treatment was necessitated by the sequelæ, coxalgias in the stage of evolution in adults and quite old coxalgias in children, in which the lesions had not quite cicatrized or were in the last stages of evolution. The operations performed were of the following types

- 1 Para articular arthrodesis with a tibial graft joining the trochanter and the iliac wing at a distance from the lesion, like the technique used by many others, Albee and Kappis in particular

- 2 Juxta-articular arthrodesis with a graft or iliac flap brought down into contact with the unopened joint capsule, very much like the technique used by Mathieu and Wilmoth

- 3 Mixed arthrodesis consisting of intra-articular and extra articular arthrodesis in which an iliac graft is brought down onto the denuded and freshened neck after opening of the joint

In para-articular arthrodesis, Bérard employs the technique used at Berck. An incision is made parallel with the gluteal fibers from the iliac crest to the base of the trochanter, and a small flap with a superior attachment is cut in the upper part of the crest of the ilium. Frontal section of the trochanter is then done and a small piece with an external pedicled base is detached. Next a tibial graft corresponding in length to the previously ascertained trochantero iliac distance is cut with the electric saw and placed between the perforated iliac wing and the detached trochanter. Muscular, aponeurotic, and cutaneous suture is then done.

The author emphasizes especially the importance of careful trochanteric insertion of the graft as it is at the trochanter that pseudarthrosis is to be feared. He always re-inforces this rigid insertion with a small osteoperiosteal flap. In one case he introduced two tibial grafts between the trochanter and the iliac wing, but the result was unfavorable, pseudarthrosis necessitating further intervention.

For juxta-articular arthrodesis, Bérard uses the technique of Mathieu and Wilmoth with certain modifications. In the cases of thin patients he uses the Smith-Petersen incision without section of the body of the tensor fasciæ latæ as is done by Mathieu and Wilmoth. In obtaining the graft he cuts the lateral portions with the electric saw as in this way the cutting is done more regularly and rapidly and causes less shock. After replacing the detached trochanter he formerly fixed it with a nail, but he now employs chromic catgut as he found that the nail acted as a foreign body and tended to cause abscess formation.

For mixed arthrodesis Bérard uses the technique described by Sorrel. However he prefers the Smith-Petersen incision, with or without inferior debridement and section of the tensor fasciæ latæ, to the incision of Ollier.

Especially in the cases of children, in whom the shock from prolonged intra-articular manipulations is often marked, poor position of the femur should be corrected at a second operation.

Before an operation for coxalgia the coagulation time of the blood should be determined, and if it is abnormal calcium chloride should be administered.

In twelve of the author's cases the operation was performed under ether anaesthesia, and in three under spinal anaesthesia.

Immediately after the operation, while the patient was still asleep, the pelvis and lower limb were immobilized in plaster. In the third or fourth month this was replaced by a shorter cast extending to the knee or calf, and three months later (six months after the operation) the patient was allowed to begin to walk. Even then the hip was immobilized by a short cast for several months to protect the graft. After a mixed arthrodesis done for sequelæ it is not necessary to immobilize as long as after a para-articular arthrodesis for coxalgia in a state of evolution.

Complete ankylosis was obtained in thirteen of the author's cases—in twelve in less than six months and in one in seven and a half months. In two cases there was incomplete ankylosis with pseudarthrosis of the graft. In one, the pseudarthrosis occurred at the trochanteric insertion of the graft, and in the other at the iliac insertion and in the midportion.

Each procedure has special indication. For sequelæ of coxalgia which had been operated upon, Bérard performed a juxta-articular arthrodesis by the method of Mathieu and Wilmoth in four cases and a mixed arthrodesis in five. He prefers the latter as it gives better and more extensive contact of the iliac graft with the bony surface of the joint and a more firm and rigid ankylosis. Juxta-articular and mixed arthrodeses will always cause a certain amount of hæmorrhagic oozing which requires careful attention. Mixed arthrodesis causes greater shock and requires greater precautions than para-articular arthrodesis.

For coxalgia in evolution in the adult and coxalgia in the end-stage of evolution in children, Bérard performed one juxta-articular arthrodesis by the technique of Mathieu and Wilmoth and five para-articular arthrodeses. In one case in which the juxta-articular route was used perforation of a tuberculous focus led to secondary abscess and fistula formation. The author has therefore abandoned this route for the para-articular operation and the use of a tibial graft. The latter procedure gave good results in four cases.

With regard to the general indications for arthrodesis in coxalgia Bérard states that in cases of healed coxalgia with residual pseudarthrosis a juxta-articular or mixed arthrodesis is indicated. In the cases of children with coxalgia in a state of evolution no intervention should be attempted until final developments can be foretold. In the early stages a bacillæmia is usually present and the bacteria might be disseminated by operation. Moreover, the coxalgia may be of a type which will respond to conservative measures. If the process seems to be evolving toward ankylosis, arthrodesis will not be beneficial. If pseudarthrosis threatens, arthrodesis

4. In epiphyseal separation exact reposition is necessary. Open operation is therefore often indicated. When once replaced, the reposition is stable.

5. Transverse fractures of the surgical neck occur in young persons and are prone to displacement. Good reposition is necessary and frequently requires open operation. Manipulative correction is often difficult.

6. Comminuted fractures occur in elderly persons. Displacement is not a feature. Simple fixation suffices. Early motion is desirable.

FREDERICK A. JOSTES, M.D.

Van Gorder, G. W.: Surgical Approach in Old Posterior Dislocation of the Elbow. *J Bone & Joint Surg* 1922 XIV, 127

Neglected and poorly treated elbow dislocations are common in China. The forcible manipulation that becomes necessary after about the third week renders closed reduction dangerous and usually unsuccessful.

The author has devised an operation in which he reaches the posteriorly dislocated joint by a median posterior incision 5 in. long. The contracted triceps is severed transversely $\frac{1}{2}$ in. above the olecranon. This gives access to the posterior surface of the humerus where periosteal tearing and bone proliferation usually take place. Any obstacle to reduction is removed and the arm then carefully flexed in the classical manner of reduction.

Following the reduction a transplant of fascia lata or tendon of Achilles is grafted between the olecranon and the triceps with the elbow in flexion of slightly less than 90 degrees.

The author reports six cases in which reduction was accomplished by this method. In two the dislocation was accompanied by a minor fracture and in one the olecranon had been fractured in an attempt at closed reduction. In all cases practically normal flexion resulted but in most of them extension was limited from 10 to 40 degrees.

ROBERT V. FENSTOV, M.D.

Carp, L.: The Roentgenological Displacements in Colles' Fracture, with Special Reference to the Mechanism of the Accompanying Fracture of the Ulnar Styloid. A Report of 100 Consecutive Cases. *Arch Surg* 1932 XXIV, 1

The study herewith reported was undertaken to determine (1) the usual roentgenologically demonstrable displacements in Colles' fracture with an accompanying fracture of the styloid process of the ulna, (2) the practical therapeutic value of such information and (3) the mechanism of fracture of the styloid process of the ulna. According to Schanz fracture of the styloid process of the ulna occurs in 53 per cent of Colles' fractures.

Of the fractures of the styloid process of the ulna occurring in the 100 cases of Colles' fracture reviewed almost half occurred at the base of the process and 29 per cent occurred with impaction of only the fracture of the radius.

When the alignment between the lower fragment of the radius and the shaft of the radius was disturbed, a lateral shift, a lateral angulation, or both occurred in the fracture of the styloid process of the ulna.

A lateral shift of the styloid fragment occurred in two-thirds of the cases of impaction of only the radius accompanied by fracture of the neck of the styloid process of the ulna and in two-fifths of the cases of impaction of only the radius accompanied by fracture of the tip of the styloid process of the ulna. In the cases of impaction of only the radius with fracture of the base of the styloid process of the ulna there was no shift of the styloid fragment.

A lateral shift of the styloid process of the ulna was more than twice as frequent as a lateral angulation.

A medial shift and medial angulation of the styloid process of the ulna were rare.

Fracture of the styloid process of the ulna accompanying simple fracture (without displacement or impaction) of the lower end of the radius was relatively infrequent, occurring in only 4 cases.

The author's conclusions from this study are summarized as follows:

1. In most cases of Colles' fracture accompanied by fracture of the styloid process of the ulna reduction of the displaced lower fragment of the radius is necessary to obtain the anatomical realignment essential for the best end-results.

2. A correlation of the roentgen and anatomical findings suggests that in the great majority of cases the ulnar styloid is fractured at the base by the pull of the intra-articular fibrocartilage of the wrist joint and at the middle and the tip by the pull of the ulnar collateral ligament. It is logical to assume that both ligamentous structures may sometimes act together to produce a fracture of the styloid process of the ulna especially when fracture occurs in 2 or 3 places simultaneously. Direct violence probably plays a negligible role in fractures of the styloid process of the ulna, although a forceful sudden impact of the carpus against the styloid process may be the cause of such fractures in a very small percentage of cases.

H. EARLE CONVILLE, M.D.

McMaster, P. E.: Late Ruptures of the Extensor and Flexor Pollicis Longus Tendons Following Colles' Fracture. *J Bone & Joint Surg* 1922 XI, 93

In a review of the literature the author was able to find the reports of only twenty-seven cases of late spontaneous rupture of the extensor pollicis longus tendon following a Colles' fracture and no report of a case of late rupture of the flexor pollicis longus tendon. In this article he reports a case of each condition.

He states that the tendons of the wrist rupture only when they are diseased or injured by trauma. Excluding suppurative tenosynovitis the conditions predisposing to tendon rupture are tuberculous tenosynovitis, gonococcal tenosynovitis and syphilis and tumors of the tendons. The majority of ruptures

SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Barcaroli, I Experimental Studies of the Changes in the Musculature of Arteries Following Their Ligation (*Ricerche sperimentali sulle modificazioni delle arterie a tipo muscolare in seguito a legatura*) *Poliedin*, Rome, 1931, xxxviii, sez. chir. 653

The author ligated the renal and femoral arteries of twenty dogs and studied the changes in the walls of the vessels at various intervals thereafter. The shortest period of observation was twenty-four hours and the longest eight months. Sections were made proximal to the site of origin of the renal artery, in the immediate zone of the ligature, and in the segment proximal to the ligature.

The findings confirmed the observation of Leriche and others that the artery is not obliterated by thrombosis, but adapts itself to the new functional demands without any important structural changes. This was true at least for eight months, the maximum period of observation in the experiments reported. A decrease in the size of the lumen of the vessel resulted only from contraction of the media. As the result of this contraction the media appeared thickened.

Thickening of the reticular tissue and hyperplasia of the elastic fibers of the media were noted. The proliferating endarteritis described by some investigators was found, but Barcaroli thinks it was secondary to damage of the intima. Thromboses occurred following injury to the endothelium in the immediate vicinity of the ligature and were for the most part non-sclerosing. In the cicatrizing process there was a proliferation of mesenchymal undifferentiated elements from the subendothelial layer and from the media, and when the damage to the wall produced by the ligature was great, proliferation occurred also from the adventitia. Endothelium took no part in the reparative process. Regeneration of muscular fibers was exceptional. Canalization of the obliterated tract was not observed during the period of observation. EUGENE T. LEDDY, M.D.

Eichenlaub Studies of the Thrombosis Problem Thoughts of a Practitioner on the Development, Prevention, and Treatment of Thrombosis and Thrombophlebitis (Ein Beitrag zum Thromboseproblem Gedanken eines Praktikers ueber Entstehung, Prophylaxe und Therapie der Thrombosen und Thrombophlebitiden) *Muenchen med Wchnschr*, 1931, 48, 1737

In the author's opinion, an inferiority of the vascular system, particularly of the veins of the lower extremities is the most important cause of thromboses. Predisposing causes are cardiac insufficiency, an injection, or traumatic injury of a

vein. The inferiority of the cardiovascular system may be due to a certain constitutional change resulting from the great physical and mental strain suffered by the German people during the war and the post-war period. Eichenlaub attributes the increase of thromboses also to the high potassium and acid content of the diet of the German people which may be due, among other causes, to artificial fertilization of the crops. He believes that in the production of embolism the antagonistic effects of calcium and potassium on the sympathetic nervous system may play an important role.

For the prophylaxis and treatment, Eichenlaub recommends the use of compression bandages, as does Fischer. As a prophylactic measure before or after operation or child-birth, he uses bandages of elastic adhesive to which rivanol is added to prevent skin infection. In addition, he prescribes active and passive movements carried out as long as the patient remains in bed. When thromboses are already present in the leg or thigh, the patient may be allowed to be up and about at once provided the proper degree of compression is used. When bed rest and elevation of the leg are necessary, as in cases of thrombosis extending above the groin, large intramuscular or intravenous injections of calcium combined with strontium are of value. For infectious thromboses, Eichenlaub recommends the administration of quinine, pyramidon, or sodium salicylate combined with thigonal packs and followed, at the proper time, by the application of compression bandages. GEBELE (Z)

LYMPH GLANDS AND LYMPHATIC VESSELS

Vasilu, T The Etiology and Pathogenesis of Lymphogranulomatosis As Determined from an Experimental Study (Conception etiologique et pathogenique de la lymphogranulomatose tiree de l'etude experimentale) *Ann d'anal path*, 1931, viii, 815

Tuberculosis is frequently associated with lymphogranulomatosis. Animals that are sensitive to tuberculosis may give a positive reaction to inoculations even when microscopic study of the inoculated lymph gland fails to reveal Koch bacilli. It is possible, with inoculated material, to produce a granulation tissue which resembles lymphogranuloma very closely. Occasionally such lesions have been produced with filtrates of tuberculous virus and in very rare instances with pure cultures. The results of experiments carried out to determine the etiological importance of other organisms have not been convincing.

From a study of the literature and the replies to questionnaires which were sent to leading patholo-

of tendons of the wrist have been caused by trauma. Trauma may sever the tendon or produce a chronic tenosynovitis such as drummer's palsy.

The author describes the anatomy of the flexor and extensor pollicis longus tendons in relation to the bones of the forearm and wrist and briefly reviews cases of subcutaneous rupture of these tendons which have been reported in the literature.

Late ruptures of these tendons after fracture of the wrist are most common after the third year of age but may occur at any time. They are about twice as frequent in females as in males. The author reviews the theories regarding the pathogenesis. In some they are attributed to separation of the tendon by the bony fragments at the time of

fracture by others to a disturbance of the blood supply by a third group to involvement of the tendon by adhesions or callus and by a fourth group to fraying of the tendon caused by continued rubbing on sharp bony edges.

The only symptom common to all cases is inability to extend the thumb but a few patients have stated that they felt something snap at the wrist. There has been no report of pain associated with the rupture. In the author's two cases the tendons were found divided at the level of a prominence on the subjacent bone. Suture was followed by a good functional result.

The article is supplemented by a bibliography of twenty-five references. C. G. S. JR. M.D.

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE, POSTOPERATIVE TREATMENT

Band, D, and Hall, I S Postoperative Massive Collapse of the Lung A Clinical and Experimental Study *Brit J Surg*, 1932, **xx**, 387

Following a review of the literature on post-operative massive collapse of the lung the authors report four cases and their own investigations regarding the condition

Theories of the origin of atelectasis fall roughly into four groups (1) those which postulate an active process in the lung, probably of reflex nervous origin, (2) those in which posture is considered the most important factor, (3) those in which the essential factor is believed to be the absorption of air below an obstruction such as would be formed by a plug of mucus, and (4) those attributing the condition to diaphragmatic paralysis

The authors' investigations were carried out on dogs The animals were divided into nine groups and in each group a different procedure was followed In all of the groups the respiratory tract was studied with the bronchoscope and the X-ray and occasionally by postmortem examination Narcosis was induced by the subcutaneous injection of sodium amytal and morphine in such a dosage that the cough reflex was abolished and the dogs regained consciousness completely within three or three and a half hours after the injection The nine procedures used were as follows

- 1 Simple laparotomy
- 2 Bronchoscopy and bacteriological examination of the bronchi of normal dogs
- 3 Bronchoscopy and the introduction into the right bronchus of gum acacia of varying degrees of viscosity
- 4 The bronchoscopic introduction of a solid foreign body into the lumen of the right bronchus
- 5 Laparotomy combined with the bronchoscopic introduction of gum acacia into the lumen of the right bronchus
- 6 The bronchoscopic introduction of gum acacia of low viscosity followed by strapping of the chest
- 7 The introduction of gum acacia of a viscosity similar to that of the bronchial content obtained from a patient suffering from massive collapse followed by the application of adhesive strapping to the lower ribs
- 8 Exposure of the right phrenic nerve in the neck, a study of the effect of electrical stimulation, and avulsion of the nerve
- 9 The bronchoscopic introduction of gum acacia into a previously phrenicectomized animal

In the experiments in which the fourth procedure was used the foreign body was promptly coughed up

when the animal regained consciousness In those in which the third, fifth, and sixth procedures were used, areas of lobular collapse were found in the lung In those in which the seventh and ninth procedures were employed characteristic massive collapse of the lung was produced

Therefore, three factors acting in combination were necessary for the experimental production of massive collapse of the lung, (1) an intrabronchial content of definite viscosity, (2) abolition of the cough reflex, and (3) limitation of respiratory movement The intrabronchial content of definite viscosity was provided by the gum acacia solution The cough reflex was abolished by narcosis Respiratory movement was limited by adhesive strapping of the lower chest or diaphragmatic paralysis These conditions often occur clinically in association with inhalation or spinal anaesthesia and postoperative dressings, position, or distention Measures should be taken to decrease or eliminate their danger One of the best methods, and most important in treatment, is the use of carbon dioxide-oxygen mixtures at the end of anaesthesia and at intervals after the operation if there is any tendency toward shallow respiration If cough is ineffective, bronchoscopy should be used FRANK B BERRY, M D

Nicolaysen, J Postoperative Thrombosis and Embolism (Postoperative Thrombose und Embolie) *Acta chirurg Scand*, 1931, **lxix**, 21

In Norway the frequency of thrombo-embolism after operation is 1.53 per cent and the incidence of death from pulmonary embolism 0.14 per cent After fractures, the incidence of thrombo-embolism is 1.9 per cent and the mortality 0.27 per cent, and after ligation the incidence of thrombo-embolism is 1.48 per cent and the mortality 0.06 per cent

Thrombo-embolism is equally frequent in men and women but fatal embolism is about four times as common in men as in women and thrombosis is twice as common in women as in men

Thrombo-embolism usually develops from six to ten days after operation, but the curve of frequency shows a rise on the first, second, and thirteenth postoperative days When no sign of embolism has appeared three weeks after an operation there is practically no further danger of death from this condition

While the season of the year is of practically no importance in the frequency of thrombo-embolism, the condition is slightly less frequent in the summer than in the other seasons

Thrombosis was clinically demonstrable in only 25 per cent of the 181 cases of embolism reviewed by the author and in 14 per cent of these it was discovered only after the embolism

as the author has arrived at the conclusion that the causation of lymphogranulomatosis has not been established but that a relation of tuberculo virus to the condition cannot be ruled out.

G. Z. DE T. KATS, M.D.

Farre M. and Coizet P. The Granular Characteristica of Malignant Granuloma As Described by Anatomical and Clinical Studies (Lecture given at the 1st International Congress of Pathology, 1928, p. 103).

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Malignant granuloma is described not only of lymphoid tissue but also of mesenchymal tissue in general including the reticuloendothelial system. It produces a remarkably characteristic reaction of the connective tissue bringing out undifferentiated cells. These embryonic and partly blood-forming elements may then undergo certain incomplete differentiation. The histological aspect of malignant granuloma is extremely variable as it depends on the local action of virus which presents increasing or decreasing amount and may sometimes disappear. The changes great and small have the intensity the uniformity the parts and the irreversibility of neoplasia. Side by side the inflammatory reaction is superadded to the plastic cells of Sternberg which the thoracic cells to be a different adenosinofibrous blast.

Malignant granuloma is therefore a fan of inflammatory but on the border of a condition between inflammation and neoplasia. It is not only a histological entity but also a clinical entity. The characteristics of the largest number of the lymphogranuloma

complicated by generalized pruritus and a continuous rise in the temperature are very characteristic.

The author reports a case in which a needle prick in the popliteal fossa was followed by the formation of a tumor the size of a small nut which broke down rapidly. On its complete excision the plasma was found to be a typical malignant angiosarcoma. Nevertheless after twenty years there is no local recurrence or generalization.

G. T. K. S. M.D.

Himes G. W. Lymphoblastoma. Some Observations on Its Diagnosis and Treatment. *Medicine* 1937, 16: 837.

The term lymphoblastoma is applied to such conditions as lymphosarcoma, Hodgkin's disease, and malignant lymphoma. These may be mistaken for an abscess. Frequently the symptoms are gastrointestinal or arthralgic. As a rule there is a loss of weight. The disease must be differentiated from tuberculosis. Biopsy should be done and the possibility of association with tuberculosis must be borne in mind.

The thoracic region is the site of cases of epithelioid tumor or carcinoma of mesothelioma and carcinoma of the neck which have led to the need to treat the thoracic lymphatic system. Except for a congenital anomaly the blood pressure is not significant. The treatment consists of high frequency x-ray radiation with a dosage that is calculated to cause a moderate decrease in the tumor. In all cases it is all that may be attempted with the patient's maximum comfort for a long time.

WILLIAMS, J. K. T. M.D.

ANÆSTHESIA

Davis, L., Haven, H., Givens, J. H., and Emmett, J. The Effects of Spinal Anæsthetics on the Spinal Cord and Its Membranes. *J Am M Ass*, 1931, xcvi, 1781

Using a technique of administration similar to that employed in the induction of spinal anæsthesia in man, the authors studied the effects of the newer spinal anæsthetics—spinocain, gravocain, scurocain, and nupercain—on the spinal cords and membranes of dogs. The only untoward clinical manifestations noted were convulsive seizures in the cases of the animals receiving a large dose of spinocain. Five animals died within twenty-four hours after the injection of the anæsthetic.

Sections from the cervical, dorsal, lumbar, and sacral regions of the cords were studied microscopically. The most constant change noted was an inflammatory reaction in the arachnoid with

thickening of the membrane and collections of proliferated arachnoidal cells and plasma cells in the interstices of the membrane in the lumbar and sacral regions. In the animals killed from thirty to ninety days after the injections fibrotic scarring of the arachnoid was discovered.

In all of the cords studied, passive changes of a retrograde or Wallerian type in the ganglion cells in the lower levels and swelling and fragmentation of the axis cylinders of the anterior roots were found. These changes were apparently not permanent. The fiber tracts of the cords studied from twenty to thirty days after the injection of the anæsthetic solutions showed evidences of Marchi degeneration.

In *in vitro* and hæmolysis experiments the authors found that the spinal anæsthetics studied are hæmolytic as well as myelolytic and apparently act on the myelin of the nerve fibers as well as on the lipoids of the red blood cell membrane.

HALE A. HAVEN, M.D.

Thrombo-embolism occurs chiefly after certain types of operations which are known to be associated with danger of embolism—(1) parotomies operated on for hernia, peritonitis on the bladder and the peritoneal surgical removal of the blood vessel anastomosis of the uterus and operations for selected abortion.

It generally increases in frequency with age and reaches its maximum incidence between the ages of fifty and fifty-nine years. The importance of age is due apparently to a beginning impairment of the regulating capacity of the vasomotor system whereby the immediate recovery of normal circulation is delayed.

The author studied the blood change arising after operation especially the increase of non-protein nitrogen. These changes occur in young as well as old persons but differ with the nature of the operation and are more marked after operations associated with the danger of embolism.

Hosoi K. P. *Embolism and Infection*
Am. Surg. 93, 67

The author was a series of a forty-four cases of pulmonary embolism with or without infection which came to autopsy at the Albany Hospital. About a few in the period of from nine to nine. The included the typical cases of pulmonary embolism, the cases of post-traumatic embolism and the various medical cases of embolism.

Secondary to be of importance in the acute phase of the condition but age evidently a factor as the frequency of embolism increased very rapidly with the increase of age. The occurrence of the thrombotic operation did not seem to be important but infection in the condition. After general anesthesia operations the incidence of embolism was 0.09 per cent and after gynecological operations it was 0.8 per cent.

In 64 per cent of the cases the condition developed within weeks after the operation. The duration of symptoms from the onset of the embolism to death varied up to ten days but 80 per cent of the patients died within a day. In the cases of medical embolism the duration of symptoms longer (a long time) since the patient probably because of the great frequency of embolism occurring sometimes a few hours. Only about 10 per cent of the deaths occurred within a day.

Fifty per cent of the postoperative embolism lodged in the lower lobes of the lung. The right lower lobe was involved twice as often as the left lower lobe. Another 4 per cent of the postoperative embolism lodged in the main pulmonary artery.

Both of the main branches of the pulmonary artery the right and the left of the main pulmonary artery the mass embolism is able to reach the main branches of the pulmonary artery. In 64 per cent of the cases the lower extremities were the source of the postoperative embolism. In medical cases the embolism occurred more often in the left lower extremity than in the right lower extremity.

Manifest in the present only 34 per cent of the postoperative cases and 50 per cent of the medical cases.

The author reports the cases in detail. The were believed to be traumatic or gynecological.

WILLIAM J. PETERSON

ANTISEPTIC SURGERY TREATMENT OF WOUNDS AND INFECTIONS

Ernst W. L. *Treatment of Wounds and Infections*
The author reports the cases in detail. The were believed to be traumatic or gynecological.

The patient whose case is reported is a young man injured in the left hand the previous day. A dynamite bomb in 1931 was exploded and he was injured. The same hand was injured in the previous day. In the cleaning of the wound small pieces of plaster were in which tetanus bacilli were demonstrated. The bacteriological examination was made of the wound. It was determined whether a prophylactic use of serum had been given immediately after the injury.

Milgram J. E. *Surgery of the Thigh*
The author reports the cases in detail. The were believed to be traumatic or gynecological.

The author describes the anatomy of the femoral spaces. The femoral spaces are the pathogenesis of the femoral spaces. The femoral spaces are the pathogenesis of the femoral spaces.

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ments on rats The anæmia was produced by removing from 1 to 5 c cm of blood by cardiac puncture The irradiation was given with 60 mgm of radium in a square applicator The radium was screened with 0.12 mm of silver when beta irradiation was desired, and with 3 mm of lead in addition to the silver when gamma irradiation was desired

To determine the effect of anæmia on skin reactions one of the clipped flanks of a rat was exposed to the applicator, the animal was then bled, and the other flank was then exposed to irradiation In the first experiments beta irradiation was used In one table the authors give the weight of the rats, the amount of blood taken, and the time of exposure to the irradiation, and in another the time of the occurrence of the skin reaction In one rat, for example, a moist surface occurred and the hair fell on the thirteenth day after the irradiation on the control side, a crust formed on the seventeenth day, and fell off on the twenty-second day, and the hair regrew on the thirty-fourth day On the side irradiated after the animal was bled the reaction was much less marked, there was no moist surface or crust formation, and the hair fell on the fifteenth day and regrew on the twenty-eighth day In all of the animals except one the skin reactions were decidedly decreased by the bleeding

In experiments in which the rats were subjected to gamma irradiation the reaction of the skin was again reduced by bleeding of the animal

In order to determine whether irradiation on one side affected the sensitivity of the skin on the other side, rats were irradiated on both flanks without being bled between the treatment of the two sides The results given in a table show no difference in sensitiveness A photograph of rats irradiated on both flanks—on the left flank before being bled and on the right flank after being bled—shows ulcers on the left flank and no reaction on the right flank

To determine the effect of anæmia on the reaction of tumors to radium irradiation both flanks of rats were inoculated with small pieces of Jensen's rat sarcoma, the larger of the tumors was subjected to beta irradiation the animal then bled, and the other tumor then given a similar irradiation Subsequently the tumors were measured at intervals of a few days Of eighteen rats eleven showed no decided difference in the tumor growth on the two sides In four, both tumors rapidly disappeared, and in the seven others the tumors grew at an equal rate In no case did the tumors irradiated after the animal was bled grow more slowly than the tumors irradiated before the animal was bled The rate of growth of the tumors is shown in charts in which superficial areas in square millimeters are plotted against days after the irradiation These charts show that in all cases the tumors irradiated after the animal was bled grew faster than the controls It is therefore evident that tumors are rendered less sensitive to irradiation by anæmia

A. JAMES LARKIN, M.D.

PHYSICO-CHEMICAL METHODS IN SURGERY

ROENTGENOLOGY

Gag r L T and Speer J J Th Roentg n Tr at
m nt f Agranulocytosi Am J Ror lg l
93 2 40

Since Friedemann first called att n t n to the
good r suits to be obtained by roentg notherapy in
agranulocytosis eports in fav of this treatment
h ve become increas gly more f eq ent Th
auth rs cite 7 igs an l s of 340 cases hich
the m rtality as 9 per cent in the gr up as a hole
wh reas in 80 ca s treated by radiati n f th
l ng bones it was only 53 per ce t I 49 ca es
treated b transfus on the mortality wa 69 per
cent n 31 treat d w h neocarsphenamin it was 7
per cent a d n 1 treated by ther method t was
5 per ce t

To sho the alve f e tgen irradiati n in
recurrent atts as w ll as th primary attack the
authors report in detail a case in wh ch the blood
showed a total absence of granu cytes o 4 occa
sions w thin a period of ten eeks and roentg
irradiati n was th o le specific method of t eat
ment They are convinced th t the t mely se f
the radiati n was the deci ng facto in the re
co ery from the 4 cr s s A good result was bta ned
also in anothe ca e wh h s cited only b flv The
authors ble e that these r lis offer uneq vocal
evidenc of th spec fic alve of r ntge radiation
n stimulat ng th pr d ctio of granulocyte and
of the ital importan e of these cells to the body

ADOLPH HART M D

Schubert E von Th T eatm nt f Ca cinom
with E tr m ly H d Roentgen Ray (L b e
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st ble) St hl ther p 93 l 36

The author discus e the C utard s adati
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case 4 000 R t fourteen d ys In both cases d k
redding of the sk n was followed by shedd ng f the
epiderm s E. ZWE L (C)

Sch I T Th Applicati n f Roentgen R d ti on
to the B ri m filled Stomach A Contrib ti on
t th Radiation Treatment of I persal G
trl Turno s Rad lg 93 69

At the present t me the maj rity of roentgen
th rape tists of wide experience do t f or
rad ti on of inoperable gastric carci omata Ex
perience with the use of bo h med um ltag a d
h gh oltag r is dat g back to 19 5 l d the a thor
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p o tected at le st some f vo able es lts might be
obta ed

After read ng Hoffelder s article Scholz devised a
techr qu which he determ n d the exact positi
of th drenals the stom ch and the g stric tom
; with the d d of the X rays projected the local n
on th rf ace of the body and then d re ted the
therapeut c irradiati n s h a r m s r that at
lex t one ad en l gland n s defin tely a ded It
o curred to him io that t might be of al e to
increase the local roe tgen ray effe t on the ga tri
tumor by apply g the r diat n t th b num
fill d stomach He r asoned that as barium has a
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n cess ry and the safety f the ad enals and p n
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ma y asta es th bar m fill d stomach mach l d
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S e o 4 h has treated s se f oper bl
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ADOLPH HART M D

RADIUM

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23 48

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and i mo e actions t d m s lat n t e peri

any appreciable extent. The animals died usually within forty-eight hours after the infection. At postmortem examination the bone marrow usually showed little evidence of regenerative activity.

In human beings, agranulocytosis (Schultz) is characterized by (1) clinical signs such as necrosis of the gums, tonsils, buccal and gastric mucosa, vulva, and vagina, (2) a hæmatological picture showing a decrease in the granulocytes or their almost complete disappearance from the circulation, and (3) the absence of a hæmorrhagic diathesis. As its cause is unknown, the condition is classified with "essential" malignant neutropænia. Schultz was of the opinion that agranulocytosis is a disease entity caused by a specific agent with a particular affinity for the myeloid system. Others regard it as a syndrome based on sepsis. Still others have suggested that it is a form of allergic inflammation in which the bone marrow is the area of diminished resistance.

From the clinical standpoint, the cases may be arbitrarily divided into 3 main groups:

1. Severe cases like those originally reported by Schultz. The onset is sudden and associated with a chill, high fever, and angina with necrosis. Jaundice and albuminuria are frequently present, the blood shows an extreme degree of agranulocytosis, and the bone marrow reveals widespread necrosis of the leucopoietic system. The disease is rapidly fatal.

2. Moderately severe cases, in which the disease is more protracted and occasionally ends in recovery. The blood shows a very marked leucopænia with a few granulocytes and very numerous monocytes and histiocytes. In the bone marrow, examination reveals numerous monocytes and histiocytes, areas of necrosis, and signs of active regeneration of the myelopoietic system. Lesions of the mucosa with necrosis may or may not be present.

3. Mild cases in which the disease begins insidiously and has a much longer course, the leucopænia is less intense, and the number of granulocytes is higher than in the moderately severe cases. The blood smears show a higher percentage of monocytes and macrophages in the circulation, a finding which may be regarded as indicative of a "recovery stage" (Schilling). The bone marrow shows, in addition to necrosis, a very active power of regeneration of the leucopoietic system. Necrotic lesions of the mucosa may be absent. The disease usually ends in recovery.

The authors conclude that the agranulocytosis resulting from the hæmatogenous infection of rabbits with *salmonella muenchen* presents close resemblances to the agranulocytic angina occurring in man. In severe cases of human agranulocytosis the reaction corresponds to that of the animals receiving overwhelming doses of bacteria, i.e., a persistent neutropænia and an intense necrosis of the bone marrow without signs of regeneration. A close similarity was noted also between the "recovery phase" seen in the circulating blood in clinical agranulocytosis and that occurring in the

circulation of rabbits infected with relatively small doses of bacteria, i.e., a marked histiomonocytosis.

MANUEL E. LICHTENSTEIN, M.D.

Conner, H. M., Margolis, H. M., Birkeland, I. W., and Sharp, J. E. Agranulocytosis and Hypogranulocytosis. *Arch. Int. Med.*, 1932, **lxxv**, 123.

The authors have applied the name "agranulocytosis" to the condition in which there is a complete or almost complete absence of granular leucocytes accompanied by leucopænia and a relative increase but, in most instances, an absolute decrease of lymphocytes. They apply the name "hypogranulocytosis" to a condition characterized by a less marked reduction in the number of granular leucocytes and a well-marked leucopænia, without an absolute increase in the number of lymphocytes but with a relative lymphocytosis.

They report fourteen cases in which the blood picture was that of agranulocytosis or hypogranulocytosis. Twelve of the patients came under observation at the Mayo Clinic in the last three years.

The first case was undoubtedly one of agranulocytic angina. The second was a typical case of agranulocytic angina except that there was no distinct ulceration of the oropharyngeal mucous membrane. However, ulcerative cutaneous lesions were present on the face and thigh. The third case was one of mild agranulocytic angina although the neutrophils were never below 11 per cent of the total of 1,000 leucocytes (hypogranulocytosis). The fourth case was also one of agranulocytic angina although the condition appeared after operation. Case 5 was apparently a case of agranulocytic angina as the second attack was especially characteristic. Case 6 should probably be classified with cases of agranulocytic angina although soreness of the throat was not marked and there was no definite ulceration. Case 7 was also a case of agranulocytic angina. In Case 8 the notable features were marked anæmia and hypogranulocytosis. Case 9 was probably one of mild agranulocytic angina with hypogranulocytosis. In Case 10 the condition was rather closely related to agranulocytic angina. In Case 11 the hypogranulocytosis did not belong to the group of agranulocytic angina. The twelfth patient did not have angina and cannot be considered as having had agranulocytic angina. The thirteenth patient did not have angina. In Case 14 ulcerative gingivitis might have warranted classing the condition with agranulocytic angina, but it seems more likely that the infection in the sternal and spinal regions and in the foot was part of a generalized infection due to failure of the bone marrow with resulting leucopænia or that the infection cured the leucopænia.

The characteristic features in the series were marked aplasia of the bone marrow and lack of the cellular reaction that is usually observed about regions of necrosis and infection. The peculiar inflammatory reaction seemed to be merely a con-

MISCELLANEOUS

CLINICAL ENTITIES—GENERAL PHYSIOLOGICAL CONDITIONS

F r r Scler i (S i s i) L h 93
657

From a review of the literature and a histological study of clerical tissue the author comes to the conclusion that clerical tissue is an inflammatory type of tissue, characterized by a high degree of cellular activity, which may be localized. The cellular changes which appear in the process of clerical tissue are characterized by a high degree of cellular activity, which may be localized. The cellular changes which appear in the process of clerical tissue are characterized by a high degree of cellular activity, which may be localized.

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D fat B J Ag ul of Angin - A
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New l k St l J M 93

Not only is it has been proved that causation of granulocytopenia but the lymphocytes play an important role in the development of the portulacanth of the disease. It is to be understood that the tonsils

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possible and expected at intervals of 10 days. **WILLIE SANCHEZ**

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cm In the center of the warts there is a tiny depression, and at this point pressure causes severe pain

The surgical removal of a wart leaves a cavity which is broader at its base than externally and sometimes 2 cm deep The authors have had to treat numerous cases of recurrence after operation, and at a recent meeting where the various methods of treatment were discussed were surprised to hear no mention of radium Surgical removal requires the induction of local anæsthesia which is often painful and the sacrifice of a considerable amount of tissue which leaves a wound that is slow to heal, it confines the patient to his room for two weeks and it gives no assurance against recurrence Radium irradiation is a much better method of treatment It is painless it causes no inflammation, it has an elective action on the lesion without affecting healthy tissues, and it is not followed by recurrence The applications are made at night and left on until morning, when the patient is able to resume his usual occupation Pain is usually relieved quickly and the wart is cast off by desquamation of hyperkeratotic tissue Final removal may be hastened by a stroke of the curette which, after radium treatment, is quite painless In the use of radium treatment in eighty-seven cases no failure was recorded

EDITH S MOORE

GENERAL BACTERIAL, PROTOZOAN, AND PARASITIC INFECTIONS

Cannon, P R, Sullivan, F L, and Neckermann,
E F Conditions Influencing the Disappearance of Living Bacteria from the Blood Stream
J Exper M, 1932, 14, 121

The authors found that immunized animals were able to remove living staphylococci and living paratyphoid bacilli from the blood stream more rapidly than control animals They attribute this fact to a specific active immunization in the former Their studies indicated that bacteria introduced into the ear veins of experimental animals pass rapidly through the capillary bed of the lungs, extracellularly and dispersed for the most part, and become generalized through the blood stream They are removed from the circulating blood by various organs but especially by the liver and spleen Their removal is brought about apparently by the action of the leucocytes and macrophages Within two minutes after their injection into the veins they show a morphological change The change is most distinct in the spleen and the liver, the two organs usually thought to be most actively concerned with the production of immune bodies

LOUIS P GAMBEE, M D

sequen ce of absence of c cul ti g granular l uo cytes The most c mmon site for the devel pment f f al regi s of infect on and necro is a al g various parts f th digest ve t act In one c se the submaxilla y gland wa n ol ed

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Th ymptoms d f f red a t rd g t the ha acter and nten ty of the u derlying ds e th stus tu n of the pri cipal les on and the patient s res stan e

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The p gros r po r in an d t on n wh h gr nulo y t s d lops F pati nt have co erd wh the leucocyte count ha f lle belo t o o per ub c m l mment of blood

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Bunn H S Contra t f the H d f m f c t n and inj l f B t r J S t 937 xi 7

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ELI TH CRA S O

C R H R B nd Stollie L W The T estm nt f Pl n id l Stn u d Its End Res l t Arc F g f f f d 93

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Fr m th t results a f i y ca the a thors c ncl de th t th u e of a l g p d cl d flap t fill the d f c t d c the m den f currence nd th time t d f h a l ng

M F L cr t M D

Degrat y d B l t t 4 Pl t r W rt Advn t k f R d m T e t r t t La ru pl t v l g d so tra t t p l d m) J m d P 93

Wa t f th sol f th foot m pol e ppl g th esult f th p a pod d by n tant t p p g th les f h eff t t p o t t th t th t t t s u m s b r m l p o t o l d ng t on l m t f th m l l a t t s m m les lem l t ny g In th c f ch l l l l t g hoe lly expo bl t the d l p m t Bes des p d po t n h t t o m t be o t h t t s t t k l th t som se e f b c r l o pa t c g The r t w m t m m l ch b d f the m t t al nd th g near th t f b t som t m p p e r n the gr t toe A l g at m be s u l d b a l f m lles t m et mes l foot f t d th t s n u ally r f nd h d m t f l m to 15

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SURGERY OF THE NERVOUS SYSTEM

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SURGICAL TECHNIQUE

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ESOPHAGUS AND MEDIASTINUM

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SURGERY OF THE ABDOMEN

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N c S h tal P lypo is

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INTERNATIONAL ABSTRACT OF SURGERY

JUNE, 1932

ABSTRACTS OF CURRENT LITERATURE SURGERY OF THE HEAD AND NECK

EYE

Lane, L. A. Practical Points in Ophthalmic Practice. A Study of Recent Food Researches. *J Am M Ass*, 1932, xcvi, 726

One of the most constant signs of food deficiency is pigmentation of the conjunctiva and a reduction of light sense. The retina stores Vitamin A and an avitaminosis causes an increase of lipoids in the rods of the retina and decreases the visual purple. Lack of Vitamin A has been responsible for epidemics of hemeralopia, xerophthalmia, and keratomalacia. Vitamin A is stored largely in the liver and the quantity stored is much depleted in chronic illnesses. It appears to be concerned largely with the prevention of infection.

Vitamin B is also necessary to good nutrition. A lack of Vitamin B causes nervousness, irritability, and easy fatigue of the eyes. In cases of uveitis of unknown cause, Vitamin B concentrate added to the diet has proved beneficial.

A lack of Vitamin C combined with calcium deficiency may be responsible for repeated vitreous hemorrhages of unknown cause.

The mineral salts are potent substances concerned in regulating the physiological processes of the body. American diets are more frequently deficient in calcium than in any of the other mineral elements. A deficiency of calcium occurs in vernal conjunctivitis.

Proteins of poor quality may cause ophthalmia. The consumption of carbohydrates is often two or three times the amount required for good nutrition. The excessive use of carbohydrates has been known to cause inflammatory diseases of the eye.

Diets which contain an excessive amount of fat and are deficient in mineral elements and vitamins cause hyperplasia of the tissues.

The food intake must provide a sufficient quantity of mineral elements and protective substances to maintain the proper equilibrium of the body fluids and tissues.

LESLIE L. MCCOY, M. D.

Duane, A. Diplopia and Other Disorders of Binocular Projection. *Arch Ophth*, 1932, vii, 187

Disorders of binocular fixation are regularly accompanied by corresponding disorders of projection. The two types of diplopia are differentiated as follows:

Physiological diplopia

The object of fixation appears single and is distinct.

The only objects seen double are those that are oblique to the eye or nearer than the object of fixation. The nearer the objects are to the latter the less double they appear and those that are alongside it appear single.

The diplopia is hardly ever recognized spontaneously and rarely causes confusion.

If an object is seen double both images are indistinct and one is in direct line with the object of fixation; the latter can be seen through it.

If the convergence is unaltered the diplopia is not affected by shifting the gaze laterally or vertically.

The diplopia can be made to disappear at once by changing the convergence or by fixing the object nearer or more remote.

Pathological diplopia

The object of fixation appears double, one image being distinct and the other indistinct.

Most of the objects in the field of vision appear double but particularly those that are close to the object of fixation and alongside it.

The diplopia often obscures itself on the notice and often causes confusion and discomfort.

When an object is seen double one image has the natural appearance of the object itself while the other is more or less indistinct and shadowy.

The diplopia is often increased or diminished by shifting the gaze sideways or up and down.

The diplopia frequently remains when the convergence is altered.

The varieties of diplopia are lateral diplopia, vertical diplopia, and torsional diplopia.

Relation of right-eye to left-eye image

On right
On left

Below
Above

Tipped to right (or left tipped to left)
Tipped to left (or left tipped to right)

Type of diplopia

Homonymous (vertical)
Crossed (or heteronymous)
Lateral
Right vertical
Left vertical
Intorsional to torsional
Extorsional to torsional

Non-physiological double vision is ordinarily caused by a deviation of one of the eyes from the fixing position.

Vertical diplopia does not occur as a result of physiological action. Homonymous and crossed

DIPLOPIA ITS CAUSES AND CORRECTION

Hand f d l pr	C seed b		Co er ib			
	A d voa f	A m l d h pe	A do bl m m f es (e-v)	A pri m h per	H l ve	
If m m	E th ey	Oa bel h	M m f d m b d with p h l m l	I b f th	I du an h h d ases	
C seed	E h ey	f b f h	A en f m m b d with h l m m f b b es to h l f m	Out do th	I sep h h d f	
R h	Ra h p l f y do	Down b for b f h	M m f f f re m b d with pa l m m (bo h d)	Up bef b or t	I ectu ases f h d more f to h ller	
L f	Lel d wn h	Up b f h d bel h	M m f wh m b d with pa l m m (b h e o p d)	D wn b f h be f f	I di an f h h d l pua ases f h d m re bou de	
I ra on l	T f h bo h mer d an		M l m f d er f ee l m j (do es)			
Esto al	T f h bo h f l m d		M l m f (f)			

diplopia o cu both phy l g lly nd p thol gi
lly To onaldiplop ad nt cu as ph s
l g l p e h n the y s a n ged

Wh nd plop a p du ed by th d vat f n
eve th m g f m d n th d t g v (f l
mag) pr je ted n d t a pp t that n
wh h the y telf d f t d

Sm lly a p m b ut p oduc d
diplopia l p m with t ba up b f th ght
y down bel eth l t p d ght d l p
nd p m pla d th pp t ay p duc a
l f t d plop A d l p l p a p du d by p m
ob usl fall n th am at g y s that p o
d c d by pathol g cal d f l t n f th ye the
o ly d f en e b ng that n d v t n f the
the fo is def c t d a ay f m th mag I
diplopia p odu d b p m the m g d f l e t d
a y f m th f a

I l l t e l d l p l p a p du d by d v t t by
p ms th t m g t d f appea ng s d
by de may p p e a n f n t f th th

D l p l a p r d by a d v t n f e th y
all be d ed and mad t disapp b tu n g
that y n th d c t p p o t t h d t n
in wh ch t s d at d t d th f l m ge

D l p l a p m b l ed by a p m l f t
cau ed by a prism t ca b ly b l e d by
s p p o g a o th p m o f q a l s t g th s t n
th p p o s t d e c t

Wh n d l p l a cau d by d t f
p e t i s n e s s a y l y p t th t y p r m
f the p ope t r e n t h t t a p e d t d u
th w y s wh h th y d t d

D l p l a may be d m n i s h e d r m o d u d n t n l y
by t u r n i n g th y e but also by t n g th h a d

F n l l y a p a t n m y l n t s u p p s n f th
t i m a g n d t h u s g t d f l l the d s a g b l
result f d l p l I d g f s e b l
l o s e s t c p c m o

In ng u d l p l a e x s t h n the d t
f u n d by the b j c t i t e t (c e n t) d f e s
n m u n t f m th t h w n b y th d l p l o o r h
d n c e a f f d e d by th b j c t e t t s (r d g l
p h o m e t M d d o r d p r a l l x)

I n c o n g u t y m a y c u a l l k n d s f d t n s
l e l e r t c a l l t n t g o u l a r d
p a r t m i t a n t f c o n g u t y m v e s n o
h n t h s n d n o n b u t h h a p p e o n l
w h n t h e h a b n a q u n t t h a b n l d
b y p a t n l t m v f t b o t h t a l a d i a t r a l
p j t o n i t m y a f f c t n e a n d t t h o t h
l i n n u t y t h u b j t d t n g u l a l y
l e t h a n t h b j t (n g t n n g r u t y) a d
f the s a m k n d S m e x h b t n t p a t h
t s n g l s n t m y t t d c y t h g
u d d l y f o m a d t a n h m y m u d l p l

S u p p e n d g u d p l o p a b e s t
e p l a d b y the u m p t n t h a t h n t h
d i s b i n t h d e a t g y s p e s m o
t e s f m t h n f l u n f i t h p o t u l f f
g n c a d n n b n o u l i s t
m g d a t l t t h g h g n d b y t h
m p n t p b y j g a t m m t b y
t h m p n t h t d m a t m n u l g h t
L L M C M D

T h l O L I R l t f f j t t h E y f m
A l k a l s N t l l t f O b d (E h h t
b e o b h s p d l g b v t g d A
m t l k l)) h f A g h v s 47

A d s g u l t h t p t f t h y n d
g t a i m h h s s l k l l q f y
t h p t f m s o f t h n d t n d t t h d
t A m g t h l k a l m m t h m t
d g t h p t T h w h d c e g
c a t m) f m l k l m y b t h t h
p o t i c a h h t h u j y t i t p p d
l c a l l y l i g h t d p t d d t f

early plastic operation by Denning's method, but after eight and nine weeks, foci of softening appeared in the corium.

In the first case, liquor potassæ was injected into the right eye on October 30, 1930. On examination, the conjunctival sac was found swollen, there was a caustic burn of the second degree, and the cornea was free. Under ambulatory treatment there was at first rapid healing without a symblepharon or pterygium. In the middle of December there appeared in the inferior conjunctival fold an elongated and dirty ulcer which was composed of confluent foci of softening. This was covered with mucous membrane from the lip. Complete healing resulted.

In the second case, ammonia was injected into the right eye on November 21, 1930. On examination, the conjunctiva was chemotic and eroded in places in the lower portion, and there was a slight injury to the lower part of the cornea. Eight days after the injury the cornea was healed. Three weeks later irritation was present, and four weeks later the patient resumed work. In the middle of January, severe inflammatory symptoms appeared and a dirty grayish white ulcer developed in the inferior conjunctival fold and the conjunctiva tarsi. Early in February the narrower area of softening was resected, sutured and covered with mucous membrane from the lip. At first the operation appeared to be successful, but after fifteen days fresh broken-down areas appeared. The dusting on of heroform to dry up the broken-down areas in the tissue was followed by the application of cocaine ointment. Healing resulted.

These late results of caustic injuries from alkalis have not been described before. The appearance of foci of softening in the inferior conjunctival fold is characteristic.

KARBE (O)

Harrison, W. J. The Barraquer Operation for the Removal of Senile Cataract. *Am J Ophthalm*, 1932, xv, 104.

The author spent nine months under the personal supervision of Barraquer. In this article he describes the pre-operative preparation given by Barraquer and reviews the reasons for the various steps in the Barraquer operation.

Cases not suitable for the operation are excluded by general physical examination. Diabetics are put on a diet. They are not given insulin as the latter predisposes to choroidal hemorrhage. If there is no active purulent discharge, even trachoma is not regarded as a contra-indication to the operation. If a purulent discharge is present the lachrymal sac is removed. A most complete examination of the eye is made, including measurement of the depth of the anterior chamber. Atropin causes too full dilatation for the perfect peripheral iridectomy, but euphthalmin and cocaine ointment are satisfactory. As the old speculum causes pressure on the globe, the Desmarres elevator is used instead. A large incision is made to prevent rupture of the capsule.

The conjunctival flap heals quickly, and when it is sutured it prevents prolapse of the iris and loss of vitreous. The violin-bow movement of the knife causes relatively little tension on the globe. To break the vacuum between the lens and vitreous the lens must be rotated. The iridectomy is done before the extraction and because of its peripheral position produces a mobile round pupil. The globe is fixed by forceps near the limbus to prevent tearing of the conjunctiva. Bacterial growth is prevented by the use of bichloride of mercury ointment. The cardboard eye pad has been found efficient. Bandaging is avoided because it causes unequal pressure when the patient turns his head on the pillow.

VIPGIL WESCOTT, M.D.

Sobhy Bevy, M. A Contribution to the Study of Exfoliation of the Lens Capsule of Glaucoma Capsulocuticulaire with Anatomical Preparations. *Brit J Ophthalm*, 1932, xvi, 65.

Exfoliation of the lens capsule was noted before the days of slit-lamp microscopy, but was then ascribed to bleaching of the iris occurring as a senile change, chronic glaucoma, or the depigmentation of diabetes. The blue fluffy masses appearing on the back of the iris have been observed also on the lens capsule, the anterior surface of the iris, and the back of the cornea. They vary from time to time in number and position. The anterior capsule of the lens shows also other changes, either central or peripheral or both. The central changes consist of a disk the size of the pupil of a fine opacity. The peripheral changes consist of a ring of granular opacities separate from the central disk or connected to it by spokes. The exfoliation of the lens capsule precedes the appearance of the blue masses on the iris. In many cases symptoms of glaucoma occur with field and disk changes and with or without an increase in the tension.

VIPGIL WESCOTT, M.D.

Bedell, A. J. Some Anomalies of the Fundus Stereoscopic Photographic Demonstration. *J Am M Ass*, 1932, xcvi, 449.

Anomalies of the fundus oculi may be due to failure of normal tissue to develop or the non-absorption of embryological tissue. On account of the multiplicity and complexity of physiological variations, wide experience is necessary to differentiate pathological changes and developmental anomalies. Certain anomalies are especially difficult to distinguish from pathological changes. This is true particularly when the two conditions are combined. Epipapillary membranes may be very difficult to distinguish from inflammatory tissue such as that observed in retinitis proliferans. These membranes are of three types: (1) ragged masses, (2) glistening membranes, and (3) persistent hyaloid tubes. Their structure and location indicate that they have their origin in incompletely absorbed embryonic tissue.

Hyaline or colloid bodies occurring on the disk may be confused with true swelling. Medullated

nerve fiber may appear as mass of glistening white patches or as fine linear striation extending from the nerve head. Under the microscope the mass may be confused with exudate. Ectasia of the nerve head may be diagnosed as glaucoma or optic atrophy and a lobomata are frequently diagnosed as chorioiditis atrophy. A large choroid angioma has been diagnosed as hamangioma but this error will not occur if a close examination is made.

The article is illustrated with stereoscopic photographs of the fundus of the wing condensation dissection.

WILLIAM A. MANN, J. M.D.

NOSE AND SINUSES

R. K. S. L. A. Diff. Ent. L. Dig. and Th. py. f. At. p. Rhinitis and Ozena. A. H. Orl. y. G. 93.

Atrophic rhinitis and ozena are two distinct diseases in the nose. The disease is characterized by a nasal discharge which is necessary to take out of the nose the dried mucus. The disease is characterized by the spraying of the paranasal sinuses. The disease is characterized by the spraying of the paranasal sinuses. The disease is characterized by the spraying of the paranasal sinuses.

Pathologically, atrophic rhinitis is characterized by a decrease in the number of epithelial cells and by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells.

Ozena is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells.

Atrophic rhinitis is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells. The disease is characterized by a decrease in the number of epithelial cells.

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more or less pedunculated mass covered by normal buccal mucosa. It is located on the external border of the alveolar ridge of the lower jaw. It varies in size from that of a mill to that of a cherry. All of the cases recorded are of the female infant.

The tumor is usually movable and has never been known to recur. Occasionally the teeth which develop at the site of the mass are disformed.

The histological structure of the genital papilloma is characterized by the presence of a fibrous connective tissue core and a surrounding epithelial layer. The epithelial layer is composed of stratified squamous epithelium. The tumor is usually movable and has never been known to recur.

The author wishes to express his appreciation to the author of the original article for the loan of the material.

M. I. G. L. thia. l. f. th. S. bm. all. ry. G. l. d. a. d. Wh. t. n. D. ct. (L. i. thia. d. l. gl. d. so. m. l. t. du. l. d. Wh. t.) B. f. md. 93. xi. 3.

The submaxillary gland is a compound tubular gland. It is located in the neck, below the mandible. It is composed of a number of lobes, each of which is drained by a duct. The gland is usually movable and has never been known to recur.

In case of the gland, the duct is usually found. The duct is usually found. The duct is usually found. The duct is usually found. The duct is usually found.

The examination of the histological material shows that the gland is composed of a number of lobes, each of which is drained by a duct. The duct is usually found. The duct is usually found. The duct is usually found.

The only possible treatment is surgical. Stones in Wharton's duct should be removed through the mouth, preferably under local anaesthesia. The tongue should be held back by an assistant and an anteroposterior incision made over the line of the duct with care to avoid the lingual nerve on the inside and the sublingual gland on the outside. If there is no infection, the wound may be sutured after removal of the stones, but it is generally better to leave it open.

One of the possible postoperative complications is stenosis of the duct. The author reports a case in which he found it necessary to make an artificial opening for the saliva. He believes that when the stones are in the gland it is preferable to remove the gland instead of simply removing the stones because in most cases the parenchyma of the gland has been seriously injured by the inflammation. Serious injury of the parenchyma of the gland may be present also in cases of calculi in the duct. The gland may be removed through the mouth, but this is very difficult and in the author's opinion its cosmetic advantage is not worth the risk involved. Maurel removes the gland from the outside through a small incision beneath the lower border of the jaw where the scar will be almost invisible. He states that if it is necessary to remove stones from the duct as well as to excise the gland, the former procedure should be done through the mouth and the latter from the outside. Care must be taken not to make an opening between the external wound and the floor of the mouth. As a rule drainage is unnecessary, but if there is danger of postoperative infection a drain should be left in the posterior end of the wound.

AUDREY GOSS MORGAN, M.D.

PHARYNX

Podvinec, S. The Problem of the Tonsils (Zum Tonsillenproblem). *Otolaryngol Slav*, 1932, 11, 108.

Because we have been accustomed to seeing the tonsils become diseased independently and act as sources of focal infection, we have attempted to ascribe to them a physiological independence, which Podvinec asserts they do not possess. Attempts to discover the function of the tonsils have not been fruitful. Podvinec explains this fact on the ground that the tonsils are not organs *sui generis* and have no physiological independence within the lymphatic system and among the structures of the pharynx.

The most important function of lymphatic tissue is the production of lymphocytes. As the majority of the lymphocytes never reach the blood stream, but remain in the lymphatic tissue or the surrounding tissues, it is reasonable to suppose that they have a function there. Podvinec suggests that they play an important role in the intermediate metabolism of the tissues. He discusses the histological factors which led to this view.

The author's investigations with regard to the function of the extensive subepithelial lymphoid-lymphatic layer which is deposited in the mucous

membrane in varying quantity and in greatest amount in the intestine, confirmed Schlemmer's demonstration that the tonsils possess no afferent but only efferent, lymph passages. The injected dye could never be found in the lymphoid-lymphatic tissue, but was discovered in the connective tissue of the capsule and in its largest processes, partly in injected lymph vessels and partly in reticulo-endothelial phagocytes of the connective tissue. In this respect there appeared to be no difference between the subepithelial lymphatic masses of the mucous membranes in different locations.

The process of absorption in the intestine is discussed and attention called to the importance of the process of diffusion. The subepithelial lymphoid-lymphatic tissue of the intestinal mucous membrane must test the irritative property of the absorbed and diffused substances rather than that of the lymph being poured out from the tissues.

The author believes that the quantity of lymphatic tissue in the different mucous membranes is in direct relation to the absorbing activity of the membranes. The tonsils, like the lymphatic tissue of mucous membranes elsewhere, serve for the control and binding of the irritants contained in materials absorbed from their surface. Their function is related chiefly to this surface. As organs of defense against bacteria, they are of very limited value.

Six colored plates illustrate the text.

FLORENCE ANNAN CARPENTER

Saltikow, S. The Pathological Anatomy of Tonsillitis (Pathologische Anatomie der Tonsillitis). *Otolaryngol Slav*, 1932, 11, 43.

To the author, inflammation signifies morphological tissue changes. Disturbances of function and other associated reactions of the organism are independent of the conception of inflammation. It is not logical to admit two conceptions of tonsillitis, a pathologico-anatomical conception and a clinical conception.

With regard to inflammation of the tonsils as with regard to inflammation of other organs the terms pus, abscess, and phlegmon are used incorrectly. Pus is not a simple collection of leucocytes. Other cells, often in large numbers, are concerned in its production. Therefore pronounced regressive cellular changes are partially responsible for it. An abscess is always a focus within tissue which destroys the latter. The presence of pus on the floor of a crypt is a purulent lacunar catarrh. This condition may develop as the consequence of a perforating subepithelial perilacunar abscess, but it is not itself an abscess. A phlegmon is not necessarily purulent.

The most interesting unsolved pathological problems are found in connection with non suppurative tonsillitis. The author dismisses as pointless the controversy as to when an accumulation of leucocytes in a tonsil ceases to be physiological and denotes inflammation. In his opinion every accumulation of leucocytes is inflammation whether it causes clinical symptoms or not. Small collections of

nerve fibres may appear as m s t e glistering white patches o as fine l n a s t at ions emote fr m the nerve head Unde the l t t r c i cum tan es they may be confus d with erudate Ectasia of th nerv h ad may b dagn sed a glaucoma o pt catrophy and c lobornata ar f e quently dagn sed s cho ro dal at ophy A larg h dovaginal vein has b en dagn ed as haem h ge but this r r w l l not o cu if a cl se e am nat n s mad

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NOSE AND SINUSES

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SURGERY OF THE NERVOUS SYSTEM

BRAIN AND ITS COVERINGS, CRANIAL NERVES

Moniz E, Pinto, A, and Lima, A The Diagnostic Value of Jacksonian Epilepsy in Cases of Tumor of the Frontal Lobe Three Cases Cured by Operation (La valeur diagnostique de l'épilepsie jacksonienne dans les tumeurs du lobe frontal Trois cas opérés et guéris) *Bordeaux chir*, 1932 III, I

In support of their contention that jacksonian epilepsy is a most valuable localizing sign of tumor of the frontal lobe, the authors report three cases showing this phenomenon In two, there had been epileptic seizures of a focal nature for many years, and in all there were objective manifestations of motor weakness on the side involved in the attacks and more or less marked signs of increased intracranial tension In no case was it necessary to resort to diagnostic aids such as encephalography The objective neurological manifestations, especially the jacksonian attacks followed by paralysis, constituted a most exact basis for localization of the tumor In all of the cases the diagnosis was verified at operation After the operation two of the patients regained complete control of the lost motor function The third, who had the most malignant lesion, a mixed glioma, had a residual motor disability due to injury of the motor cortex which was unavoidable in the removal of the tumor

The authors urge earlier intervention They regard it as a grave error to await signs of increased intracranial tension with more permanent motor loss and visual difficulties when a definite localization is possible before that stage

HALE HAVEN, M D

Kux, E A Malignant Pinealoma and a Malignant Fetal Adenoma of the Hypophysis (Ueber ein boe-artiges Pinealom und ein boesartiges fetales Adenom der Hypophyse) *Beitr z path Anat*, 1931, LXXVII, 59

The first case reported by the author was that of a man twenty-two years old who first developed symptoms of tumor of the brain one year before his death The first symptoms consisted of bilateral papilloedema absolute immobility of the pupils and paresis of the abducens and trochlear nerves with double vision These were followed later by twitchings of the extremities a tendency to fall to the right and backward, and ataxia Roentgen examination showed destruction of the sella A diagnosis of tumor growing from the third ventricle into the sella but not a tumor of the hypophysis, was made Puncture of the corpus callosum was done first and then a decompression trephination On the day after the trephination the patient died

Autopsy disclosed a soft, grayish red tumor the size of a plum, arising from the pineal gland Histological examination showed, in addition to characteristic mature pineal cells with large distended nuclei poor in chromatin, immature embryonal pineal cells with small, deeply stained nuclei which suggested lymphocytes and surrounded the vessels in the form of wreaths

The author regards it as remarkable that, except for marked cachexia which may have been of epiphyseal origin, there were no evidences of endocrine disturbances It is well known that, in young persons tumors of the pineal gland are usually accompanied by premature sexual development and unusual longitudinal growth

The second case reported by the author was that of a man twenty-two years of age who came to the clinic because of disturbances of vision A diagnosis of tumor of the hypophysis was made on the basis of bitemporal hemianopsia with normal vision and normal evegrounds and enlargement of the sella The patient refused operation A few months later he suddenly developed very severe general symptoms numbness, bilateral amaurosis, polyuria and a small irregular pulse Two days later he died before operation could be performed

Autopsy disclosed a hæmorrhagic infarcted tumor of the hypophysis measuring 5 by 4 by 3½ cm which was divided into two equal parts by the flattened chiasma Microscopic examination showed the tumor to consist of solid cellular proliferations, most of which surrounded the vessels The relatively small cells had nuclei rich in chromatin Because of the perivascular arrangement of the partly cylindrical and partly spindle shaped cells, the author diagnosed the neoplasm as a fetal adenoma

In conclusion, Kux gives a brief review of the recognized symptoms of tumors of the hypophysis

BRUETT (Z)

Alcaino, A A Clinical Study of the Nasal Nerve Syndrome Atypical Forms (Estudio clínico del síndrome del nervio na-al Formas atípicas) *Rev med Lat-Am*, 1931 XVII, 165

The nasal nerve syndrome was first described by Charlin in 1930 It includes three groups of symptoms, ocular, nasal, and neuralgic The ocular symptoms consist of conjunctival injection hyperæsthesia of the internal angle of the conjunctiva blepharospasm, and corneal lesions The nasal symptoms are congestion and hyperæsthesia of the nasal mucosa and pain in the upper orbital angle The neuralgia occurs in the naso orbital region

Mechanical factors are apparently often responsible for the onset of the condition Among these are adenoids, deviation of the nasal septum and

leucocytes are demonstrated best by the oxydase reaction. For a clear demonstration of the inflammatory changes in the tissue, the hematological staining methods are essential. In the oxydase reaction and the Giemsa and Unna Pappenheim stains the frequency of inflammatory cells and the large numbers present in both acute and chronic tonsillitis are surprising. The oxydase reaction reveals leucocytes where they are not expected and shows how few of the cells that at first were taken for leucocytes are such. Mast cell and plasma cell are found in acute and chronic tonsillitis and in hyper trophy of the tonsil.

With regard to the pathological significance of the plug the author says that a dense yellow mass is usually of a harmless nature. Fluid greenish plugs like contents more often indicate general inflammation. Microscopic examination is necessary as the composition of the plugs is the decisive factor. The number of leucocytes and the amount of fibrin in the plug are of importance. Leucocytes are particularly numerous in diffuse tonsillitis.

The rate of chronic inflammation of the tonsils has been suggested and discussed. The author states that in order to make a correct diagnosis of the tonsillitis the subacute and subchronic changes must be studied and the kinds of cell that are typical of inflammation must be sought in the fibrin as well as the lymphatic tissue. The findings of the granulation tissue is important especially as the focus of note is the transition from the chronic to the chronic form they do not signify reparatory changes. It is frequently in the tissue of the tonsil tissue in the capsule and obliteration of the blood vessels occurs. Finally, there may be complete fibrosis atrophy. In the final stage of chronic tonsillitis

it may be difficult to distinguish chronic tonsillitis from other fibrous changes.

The article is illustrated by nine colored plates.
FL 2 54 4 CA 27 R.

NECK

Saint Anna and Heisler. Thyroidectomy in a case of a Typical Myxedema to Euphoric. G. Heisler, M.D., and Anna, M.D. (Lancet, 1914, 1, 100). The authors report a case of myxedema in a woman, 45 years of age, who had been ill for many years. The patient had been treated with thyroid extract for many years, but the symptoms had not improved. The authors performed a thyroidectomy, and the patient recovered completely. The authors state that the patient had been ill for many years, and that the symptoms had not improved until the thyroidectomy was performed. The authors also state that the patient had been treated with thyroid extract for many years, but that the symptoms had not improved.

The patient's case was reported as a woman, 45 years old. Her mother had myxedema, and one of her sisters had hypothyroidism and another of her sisters had hyperthyroidism. The patient had been ill for many years, and the patient had been treated with thyroid extract for many years. The authors performed a thyroidectomy, and the patient recovered completely. The authors state that the patient had been ill for many years, and that the symptoms had not improved until the thyroidectomy was performed. The authors also state that the patient had been treated with thyroid extract for many years, but that the symptoms had not improved.

Gr. D. T. A. M. D.

exchange and carbohydrate metabolism, were severely attacked. Their involvement may have been responsible for the polydipsia and polyphagia. The nuclei tuberosi, which are responsible for heat regulation, were apparently intact. Parts of the olfactory system, the substantia perforata anterior, fornix, nucleus amygdalæ, hippocampus major, and anterior commissure were considerably diseased. The epileptic attacks which began with an olfactory aura may have been related to the disease of these parts. The psychic changes must have depended on the involvement of the nuclei on the floor of the third ventricle, especially the corpora mamillaria. Involvement of the nuclei in the Korsakow syndrome was described by Gamper in 1927 and Foerster, in 1929, observed an acute maniacal state after manipulations of the third ventricle on the operating table. Microscopic examination of the corpora quadrigemina in the authors' case showed changes which explained the ptosis, the conjugate paralysis of the eye muscles, and the paralysis of the nerve center which controls convergence of the eyes and accounted for the erroneous diagnosis of primary tumor in the region of the corpora quadrigemina.

The structure of the tumor was remarkable for the variety of the cell types. Only a few of the findings can be given. Sections stained by Nissl's method showed a definite cell form. The cells were large and most of them were round. They had a wide protoplasm body which contained no distinct Nissl granules, stained only as a fine dust, and showed many nuclear peculiarities and cell processes which had no demonstrable connections with a capillary wall. The cells were interpreted as being preliminary stages of ganglion cells (non-differentiated ganglion cells). A second definable cell group was of a glial nature. A third variety, which could be stained with thionin in the Nissl sections and presented many peculiarities, were classed as abnormally large spongioblasts. In addition, there were astroblasts, which were found in the optic nerve and scattered elsewhere in the tumor. Finally, there were cells of the Langhans giant-cell type, which are frequent in glial tumors.

In the optic nerve the small and large glial cells predominated, and among them were scattered spongioblasts, astroblasts, and astrocytes. The site of the tumor, its localization especially in the optic system where it penetrated even into the retina, and its involvement of other parts of the brain, including the frontal, parietal, and temporal lobes, are regarded as especially noteworthy.

JUNUS (O)

Ballance, Sir C., and Duel, A. B. The Operative Treatment of Facial Palsy by the Introduction of Nerve Grafts Into the Fallopiian Canal and by Other Intratemporal Methods. *Arch. Otol. Laryngol.*, 1932, 21, 1.

Nerve suture and anastomosis have been practiced clinically and experimentally for centuries (Guv de Chauliac, 1363, Flourens, 1842). The

facial nerve was anastomosed to the spinal accessory nerve by Drobnik in 1879 with resulting symmetry. In 1895 Ballance performed a similar anastomosis. With certain brilliant exceptions, this anastomosis has not been satisfactory as it has been followed by interference with the action of the spinal accessory nerve and too much association of shoulder and facial movements. However, Cushing reported a case with good disassociation after nine and a half months. Symmetrical, subconscious emotional movements of the face, the movements most desired, are those most frequently not recovered.

The hypoglossal nerve was used for anastomosis with the facial nerve by Korte and Ballance in 1903, and by Tilman in 1900. The associated movements following this anastomosis were considerably less noticeable than the associated movements after anastomosis of the facial nerve to the spinal accessory nerve and the paralysis of one-half of the tongue caused less discomfort than paralysis of the shoulder. The authors believe that end-to-end anastomosis with sacrifice of the donor nerve is preferable to end-to-side suture in an attempt to preserve some of the function of the donor nerve.

In experiments on monkeys in which the facial nerve was anastomosed to the descendens noni the operation was followed by remarkable associated movements. Atrophy of the muscles of the hyoid and larynx was prevented by end-to-side suture of the distal end of the descendens noni to the lower border of the hypoglossal nerve.

Anastomosis of the facial nerve with the glossopharyngeal nerve was first suggested by Schæfer in 1895. In 1927, Watson Williams reported 2 cases in which it gave a successful result. One of the patients was able to whistle after the operation. Ballance has done this anastomosis in the cases of 5 patients and in experiments on monkeys. He states that if anastomosis is the procedure chosen the glossopharyngeal nerve is the ideal nerve to use.

Frazier and Spiller have described the following 3 stages in recovery from paralysis of the facial nerve: (1) the restoration of normal tonus so that at rest, the face is symmetrical, (2) the stage in which voluntary movements are possible, and (3) the stage of attainment of symmetrical movements induced by emotional stimuli.

The authors believe that certain stimuli may be transmitted to paralyzed muscles through paralyzed nerves. This is suggested by the increase in the paralyzed appearance of the paralyzed face when the nerve is cut for anastomosis and by the fact that, as early as one month after an anastomosis, and therefore long before any motor power is noted, some improvement in appearance and even some subjective change is usually apparent. These phenomena may have some relationship to the static motility described by Hunt. Hunt described 2 kinds of contractile substance in the striated muscle fiber which are related to 2 different forms of activity: a contractile and a postural function.

The intratemporal procedures discussed by the

hypertrichosis. In some cases systemic conditions such as syphilis and acute nephritis are responsible.

Chalons syndrome is easily confused with conditions involving the eyelids and keratitis may lead to an erroneous diagnosis but in these conditions there are no associated nasal symptoms. Of help and in the differential diagnosis is the characteristic position. In the ocula and in the local area it will cause disfigurement of the symptoms whereas in the nasal reverse syndrome it will fail.

When the patient with the nasal nerve syndrome complains of pain in the supraorbital groove diagnosis of a uterine frontal sinus is often made. The differential diagnosis depends mainly on the onset of the condition, the response to treatment and the findings of laboratory tests. Acute frontal sinusitis is usually secondary to a cold, a purulent sinusitis other affliction of the respiratory tract, whereas Charles syndrome has a slow onset and always primary. Spraying with a cocaine-adrenaline solution lessens the symptoms in Chalons syndrome but gives only temporary relief in frontal sinusitis. Transillumination and roentgenogram will show pathological changes in frontal sinusitis and give a guide in finding Chalons syndrome.

The treatment of Chalons syndrome consists of spraying the nasal mucosa with a 5 per cent solution of cocaine and adrenaline. Under this treatment the symptoms gradually subside. The symptoms would be supplemented by correction of any pathological condition present in the nose and the treatment of any associated disease.

U. O. F. M. to M. D.

F. R. S. O. and G. G. O. A. Ca. f. S. Called
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M. left rm. G. ng. l. d. (C. F. l.) w. p.
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m. l. f. m. g. l. d. Z. h. f. V. l. 93
15

In the case of the young old man admitted to the hospital for treatment of a tumor of the right eye, the patient was 30 years of age and had been suffering from a tumor of the right eye for 10 years. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection.

The patient was a healthy, well-developed man, 1.75 m tall, weighing 75 kg. He had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection.

General physical examination was normal. In addition, there were frequent attacks of migratory chest pain and a certain tendency to urticaria with lesions of the skin. The physical and general physical examinations other than negative. The histological examination of the tumor was normal.

On the evening of the first of the tumor, the patient was normal. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection.

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The findings were that the tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection. The tumor was a large, fleshy, pedunculated mass, 4 cm in diameter, extending from the right eye and covering the right cheek. The patient had no other symptoms and no history of trauma or infection.

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a plugging of these foramina by pieces of broken bone. He believes that compression from blood clot or swelling could not have caused the widespread cranial nerve involvement, especially since the function of these nerves had not returned after a period of a year. He favors lumbar drainage of the cerebrospinal fluid in all cases of fracture of the skull as a diagnostic as well as a therapeutic procedure.

R. GLEN SPURLING, M.D.

Od., F. Tumors of the Basal Ganglia. *Arch Neurol & Psychiat.*, 1932, **LXXII**, 249.

The author studied twenty-five cases of tumor of the basal ganglia in which the diagnosis was verified by postmortem examination. The neoplasms were of various types, but the majority were glioblastoma multiforme. Seven of the cases are reported in detail.

Contrary to the general belief that there is a definite lenticular syndrome, the author was unable to find any specific signs in the twenty-five cases. Most of the symptoms were manifestations of partial decerebration. Od. believes that the absence of characteristic symptoms in lesions of the basal ganglia may account for the fact that in none of the cases reported was a diagnosis made of involvement or destruction of the basal ganglia.

ROBERT ZOLLINGER, M.D.

SPINAL CORD AND ITS COVERINGS

Stoer, O. Chordotomy (Die Chordotomie). *Beitr. z. Klin. Chir.*, 1931, **CLIII**, 384.

Chordotomy, division of the anterolateral column of the spinal cord, appears to offer the possibility of interrupting pain conduction at a point where the paths for pain sensation become united and the paths for movement and other functions diverge.

Since 1911 about 150 chordotomies have been reported in the literature.

At the Tuebingen Clinic the operation has been carried out 12 times to date. In 10 cases entire freedom from pain or sufficient improvement to give the patient rest and sleep was obtained. In a case of tabes and a case of arthritis deformans the result must be regarded as a failure. The operation was usually done bilaterally and on the third and fourth dorsal segments. As a rule, the cut surface was 3 mm long.

The indications were unbearable pains from inoperable tumors of the thoracic and abdominal cavities, spine, pelvis, rectum, and urogenital tract and in amputation stumps of the lower extremities. Tabes, syringomyelia and all processes that could not be localized exactly were excluded.

One patient died as a result of the operation, and one each from pneumonia, circulatory weakness, hemorrhage from carcinoma of the stomach, urosepsis, cachexia, and wound infection. Secondary phenomena were limited by a correct technique. Transitory motor disturbances, bladder and rectal disturbances, and root injuries were observed.

The operation may be performed with the patient in the abdominal or lateral position. The anesthesia may be local, high lumbar, or general. The laminectomy should be sufficiently extensive. As a rule it should include 3 or 4 vertebrae. The opening in the dura should be about 6 cm long. For the delivery of the cord, the author recommends division of the posterior spinal cord roots and elevation with a rubber band 1 cm wide and 20 cm long. The latter should be carried around with a slightly modified Billox tube. A transverse incision, from 3 to 3.5 mm long, should be made with a small, sharp knife. The dura musculature, and skin should be sutured.

SONNAG (Z)

Sozon-Jarosevic, A. Repeated Chordotomies (Ueber wiederholte Chordotomien). *Nerv. Chir. Arch.*, 1931, **LXXII**, 319.

Of thirty patients subjected to chordotomy at the Neurological Surgery Clinic at Leningrad in the period from 1927 to 1930, five were operated upon repeatedly. Clinical experience therefore shows that in some cases the favorable results of the operation are transitory. A careful study of the clinical picture and especially of the disturbances of sensibility which develop after chordotomy leads to the conclusion that the recurrence of the symptoms is due to incomplete section of the anterolateral columns of the cord. At first, when oedema and hemorrhages occur in the region of the incision, the conduction of the anterolateral column may be completely blocked but when these pathologic anatomical changes disappear, the fibers remaining intact begin again to transmit pain.

Complete section of the anterior portion of the anterolateral column which transmits the sensation of pressure is of particular importance as recurrences of pain sometimes develop in the form of pressure paresthesias when pressure is exerted on certain parts of the body.

Individual variations in the width and thickness of the column may also be responsible for unsuccessful results. Another cause of recurrence after chordotomy for inflammatory degenerative processes in the nerve roots and spinal meninges is the development at the site of operation of cicatrices and adhesions which form new foci of irritation. Polenov therefore recommends repeated chordotomy for relief of the pain. Each chordotomy must be performed just above the site of the preceding operation. Therefore the first operation must be performed, not at the level of the second or third thoracic vertebra but below these vertebrae.

The author reports five cases of repeated chordotomy. In the first case the second operation was performed because of a lumbosacral plexitis and was followed by cure. In the second case ten different operations were performed for meningoradiculitis. Among these were three chordotomies. Two of the latter were performed on the left side and one was done on the right side. Cure resulted. In the third case six neurotomies were performed without success.

auth rs are decompr ss on of the fa al nerv d ect suture or appo t on of the ends of the d v d n rve without di placement f m the canal and d splac m nt of the nerve fr m the canal foll w d by r mo al of the d maged po t on and suture with or without sh rien g of th r ute of the n rve W th r g rd to d comp c on of the facial n rve th auth s tate that Alt ad ouated e p sure f th nerve at the time of the m to d operation in case f mast d d ea c w th paly F ca s f r i mat c dam ge of the nerve Kurm l re ommended xpl at on f the nerve nd a sort of debr d ment of the wound Kennedy r po ted partial success f m m val of s r t u g n u l t i n t sue a d b n fr m a ound th n rve f f t en j a s afte damage f om a mastoid perat n Th autho re con i c d that in c sta n cas d c mp ss n f th n rve s of alue

D ect suture or appo t n of th end f th d vided n rve with t d pla cement f m th canal s chara ten d as th ideal proc d r h h h uid b a r d out w he e p a i c b l wheth the d n of th n rve s r ce to old

D i p l e m e n t of th n rve f om the canal f l l w d by r mo al f the d m g d po t on and suture th r w th ut short n g of the te of the nerv h s b e n done su ces fully

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3 Th int du t of rve g f t Th d m g d n d a e u t a v d th g p s i l d th g f t a k n f m th ext r n l p r t y r v f Bell Any a v mot n r v m b used f t of su tabl s Th gap eld m m th 5 mm wid

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2 Ma toid d ease and ma toid operat ss

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3 F a t r e f th m i d d l e f s s of th b a s e of th s k u l l I f the a e a d m a g e b l c a l l e d o p e a t n h o l d b e d n f i p o b l e

4 S t a b w u n d f the n e k

5 T u m o r s of the p r t i d r g i o n and of the t e m p o a l b o n and m l g n a n t t u m o r s

The t c l o t n th p o t o c o l s of th a u t h r s e p e r m t s and e p o t s the e d e s u l t s

J u r e s B B o v M D

M u x W G A C F F t u e f th B a e f
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o) P i l R m 93 r p i 49

The autho epo t an u r u a l c a s of f c t r f th k u l l i w h t h e a a m u l t i p l e i n v o l m e t f the n l n v Th f a t u l n t d d f n the f o t a l b o n e i t o t h b o f th k u l l n th l e f t s d Th u a l l c a l g s f h d i j u y e p r e s e n t Th b o p l l d s u n d m a k d p r s u a d o n t a n d b l o o d P l e b l e e d i n g f m the a p h a n r e q u e s d i m p n d T l e d y s f t the a c d n t h a c u t s y m p t m f h e a d n u h d d s a p p e r d n u l b c a l x m n t o t h n l d t h f l l g c a d t s

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Th a u t d s e n m d t l i t h t r a i o f th k l l r g a r d s t e p t b l t e l a f t u e t d g to th b s e l l t t b c e th m u l p l t f g n d m p t m t h c s e e p t d d the f l u e f t h s e g n s d m t r i s t h w m h m p m e t d g t h s e t t m t m l p l b a l f t l g g t h f m a f t f t h n l d p o b l y

ment of prime importance in the treatment of wounds of the head and face. He believes that lumbar puncture, single or repeated, is indicated in all wounds of the cranium and in those of the face in which there is a possibility of skull fracture or of damage to the cranial contents. In the presence of fracture with or without depression, simple decompression performed immediately or early is obligatory. When the meninges are broken through and the projectile has penetrated the brain, excision of the infected cerebral tract is necessary. Secondary or late trephination for decompression or the removal of foreign bodies is contra-indicated unless an intracranial abscess is suspected. As cranioplasty is generally associated with little danger, repair of the bony defect with osteoperiosteal grafts, a cartilaginous graft, a metal plate, or a sterilized bone plaque should be done to protect the brain. However, this procedure will not relieve either objective or subjective disturbances.

The immediate mental and nervous complications of wounds of the trunk or extremities include delir-

ium, onerism, mental confusion, asthenia and mania, amnesia, toxic psychoses, early dementia, emotional difficulties, hysteria, epilepsy, paralyses, and reflex contractures. These disorders are believed to have an infectious, toxic, or emotional basis. Certain wounds of the trunk or extremities are accompanied by commotio cerebri which complicates the picture. Mental confusion is increased also by intoxications, such as chronic alcoholism existing before the wound was sustained. Wounds of the trunk and extremities like wounds of the head require early surgical treatment. Evacuation of the patient to a base or home hospital is as urgent as operation. In the author's opinion it is desirable to isolate certain patients with grave and disfiguring wounds from their comrades not only in the base hospitals but also in the front line stations.

In conclusion Benon says that the complication of war wounds by nervous and mental disturbances necessitates the establishment of psychiatric centers for treatment of the war wounded.

HALE HAVEN, M D

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chordotomies were th n don The last cho dot my
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T o c h o r d t o m e s w e r e f l l w d b y s m r e m e n t
G l r e o (2)

SYMPATHETIC NERVES

Canz er G A C l i n i o s u r g i c I C o n t r i b u t i o n o n
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93 x x 303

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p l a i g a n

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s a l w a y p o s s b l u n l e s t s c o v e r e d b y t h c o l

T h e a d e a t n s f o r r e s e t f t h p r e s a l
n r v e c l u d p e l c n e u r a l g i a g i s m u b l l u
d y s m n o r t h a h y p o p l i u t e m t r h a g i a
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c r e s i n p e b l e c a r t m o f t h t u s t h p a i
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T h p o s t o p e a t e c o r s e i s s a t d t h a
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o f p a i n l s s m e n s t r u a t o n A L o R o i f D

MISCELLANEOUS

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W a r w o u n d o f a l l v a r e t e s w h a t e r t h l o c a
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a f t l e s n t h e r o l n d i c e a

T h s e q u e n c e o f s e o d a r y m e t i l a l e r o u s
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R n o d e s a l y t h o u g h s g a l t r e a t

ment of prime importance in the treatment of wounds of the head and face. He believes that lumbar puncture, single or repeated, is indicated in all wounds of the cranium and in those of the face in which there is a possibility of skull fracture or of damage to the cranial contents. In the presence of fracture with or without depression, simple decompression performed immediately or early is obligatory. When the meninges are broken through and the projectile has penetrated the brain, excision of the infected cerebral tract is necessary. Secondary or late trephination for decompression or the removal of foreign bodies is contra-indicated unless an intracranial abscess is suspected. As cranioplasty is generally associated with little danger, repair of the bony defect with osteoperiosteal grafts, a cartilaginous graft, a metal plate, or a sterilized bone plaque should be done to protect the brain. However, this procedure will not relieve either objective or subjective disturbances.

The immediate mental and nervous complications of wounds of the trunk or extremities include delir-

ium, oneirism, mental confusion, asthenia and mania, amnesia, toxic psychoses, early dementia, emotional difficulties, hysteria, epilepsy, paralyses, and reflex contractures. These disorders are believed to have an infectious, toxic, or emotional basis. Certain wounds of the trunk or extremities are accompanied by commotio cerebri which complicates the picture. Mental confusion is increased also by intoxications, such as chronic alcoholism existing before the wound was sustained. Wounds of the trunk and extremities, like wounds of the head, require early surgical treatment. Evacuation of the patient to a base or home hospital is as urgent as operation. In the author's opinion it is desirable to isolate certain patients with grave and disfiguring wounds from their comrades not only in the base hospitals but also in the front line stations.

In conclusion Benon says that the complication of war wounds by nervous and mental disturbances necessitates the establishment of psychiatric centers for treatment of the war wounded.

HALE HAVEN, M D

SURGERY OF THE CHEST

TRACHEA LUNGS AND PLEURA

Li n C Acut Pulm nary Œdema (Loedem p l
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The most common c u s f a ute pulm n ry
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monary œdema and ang na pect ris

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Torelli, G. A Particular Type of Roentgenological Picture in Pneumothorax Opaque Pneumothorax (Un particolare quadro radiologico del pneumotorace il pneumotorace opaco) *Radiol med*, 1932, **VI**, 109

Torelli refers to the type of pneumothorax in which the collapsed lung appears less opaque than the peripheral layer of gas surrounding it. He reports twelve such cases. The comparative transparency of the collapsed lung is due to pachymeningitis of the parietal pleura. C. D. HAAGENSEN, M.D.

Stoichitz, A., and Dinischiotu, G. The Intrapleural Pressure in Spontaneous Pneumothorax (La pression intrapleurale dans les pneumothorax spontane) *Arch med-chir de l'appar respir*, 1931, **VI**, 317

The authors discuss the differential pressures in spontaneous pneumothorax: the etiology of amphoric breathing, and the metallic tinkle heard in certain types of pneumothorax. They cite cases of spontaneous pneumothorax in which the pressure varied from time to time. Roubier and Roussin reported eighteen such cases. From a comparison of the physical signs with the intrapleural pressure, they concluded that amphoric breathing is more intense when the pressure is increased. In five of their cases in which the amphoric quality was absent the intrapleural pressure was either zero or only slightly positive.

With regard to the functional symptoms resulting from the intrapleural pressure the authors state that there is no constant relationship between the degree of pressure and the symptoms, although they admit that in some cases the symptoms of asphyxia are undoubtedly explained largely by the increase in the intrapleural pressure.

Burrell noted that the intrapleural pressure in pneumothorax varies with the patient's position. The authors confirmed this observation in seven cases of spontaneous pneumothorax and two cases of artificial pneumothorax. In these cases the intrapleural pressure was greatest when the patient was lying on the side of the pneumothorax. When the patient was on his back, it was less, and when the patient was lying on his normal side it was still lower. This variation was quite independent of the presence of fluid in the pleural cavity. In cases of frank open pneumothorax there was no variation in the pressure.

The authors next discuss the amphoric murmur sometimes heard and review the various theories with regard to the method of its production and its significance which have been advanced since the time of Laennec. Like Bernard Coste, and Valtis they have noted that it is very rare in cases of artificial pneumothorax. Consequently a perforation in the lung is necessary for its production. In their own cases, in which they increased and decreased the intrapleural pressure as desired they found that the murmur could be brought about, increased, and abolished in the valve type of pneumo-

thorax by changes of pressure. They decided that the murmur depends chiefly on the pressure of air in the pleural cavity. In the majority of cases a positive pressure is necessary, but if the pressure becomes too great the murmur ceases. Hence it cannot be said to vary directly with the increase in pressure. It may be perceived even when the pressure is negative and may cease when the pressure becomes positive.

With regard to the metallic tinkle, the authors again review the discussion since the time of Laennec. They conclude that it is nothing more or less than a bullous rale which assumes a metallic sound because of the air present in the pleural cavity. A certain amount of tension is necessary. As a rule a metallic tinkle follows the variations in the amphoric murmur. FRANK B. BERRY, M.D.

Gullotta, G. Phrenicectomy in the Treatment of Pulmonary Tuberculosis (La frenicectomia nella cura della tubercolosi dei polmoni) *Arch ital di chir*, 1931, **XXX**, 361

The author reviews the literature on the use of phrenic exeresis in the treatment of pathological processes in the lungs and reports in detail forty-two cases in which this operation was performed.

Failures following the old operation of simple section of the phrenic nerve were probably due to anastomoses of the phrenic nerve with the sympathetic anomalies of the nerve, or accessory nerve pathways from the fifth and sixth cervical segments. The division of about 10 cm. of the nerve has given better results. The technique most commonly used is that developed by Felix.

The conditions in which this procedure is of value now include not only processes in the lower lobes but also apical lesions and even bilateral lesions. Extensive and florid pulmonary processes, sclerosis of the pleura, and bronchiectasis are contra-indications.

Among the complications, which are rare, are emphysema of the mediastinum, hæmorrhage, transient brachial plexus paralysis, and Horner's syndrome.

The mode of action of phrenic exeresis involves a modification of the anatomy and physiology of the lung. The important changes resulting from the ascent of the diaphragm are relative immobilization and a reduction in the volume of the lung and a change in the lymph and blood flow. After resection of the nerve the diaphragm rests in the expiratory position. As a rule the elevation of the diaphragm occurs immediately but sometimes requires from two to six months. It depends on the ability of the lung to contract, and this depends on both the apical and the basal portions of the lung. Obviously sclerosis of the pulmonary parenchyma is a hindrance. As the diaphragm is responsible for only about one third of the respiratory act, phrenic exeresis may be done bilaterally.

Marked improvement is evidenced after the operation by a decrease in the temperature, the cough,

pneumonia consequent upon exanthemata and pertussis, but also regarding conditions of various systems other than the respiratory tract

There are no truly typical physical findings. The signs may be suggestive of areas of atelectasis and cavitation. There may be increased whisper or diminished breath sounds. Rales are nearly always noted. Hypertrophic osteoarthropathy is frequently present.

In many cases the diagnosis may be made from the ordinary roentgenograms of the chest, but these should always be supplemented by roentgen examination after the injection of lipiodol. Fluoroscopic examination is of particular value because it gives information regarding the motility of the diaphragm and the condition of the mediastinum, and shows whether the heart shifts with a change of position.

By means of bronchoscopy it is possible to rule out the presence of a foreign body, new growth, or bronchostenosis, to determine which bronchi are discharging pus, and to make the most complete lipiodol injection.

The existence of a relationship between diseases of the nasal sinuses and pulmonary suppuration has been demonstrated comparatively recently and its importance is now being recognized.

EARL O. LATIMER, M.D.

Brill, S., Prinzmetal, M., and Brunn, H. Factors Altering Intrapleural Pressure and Their Clinical Significance. *J. Thoracic Surg.*, 1932, 1, 243.

The authors have made a study of the various factors affecting intrapleural pressure and the relationship between intrapleural pressure and thoracic girth.

Following the administration of bronchodilating drugs such as epinephrin and atropin the intrapleural pressure became more positive and the thoracic girth decreased. Bronchoconstricting drugs such as eserine and pilocarpin nitrate caused a decrease in the intrapleural pressure and an increase in the thoracic girth. The inhalation of carbon dioxide resulted in a more negative intrapleural pressure and an increase in the thoracic girth similar to that produced by bronchoconstricting drugs.

From these findings and the observations of other investigators with regard to bronchodilatation following the inhalation of carbon dioxide the authors conclude that there are two mechanisms in the hyperpnea associated with the inhalation of carbon dioxide: (1) a bronchodilatation which facilitates the exchange of air, and (2) an increase in the mean thoracic girth, more negative intrapleural pressure, and greater distention of the lungs, which increase the respiratory exchange.

From their experiments they conclude that bronchoconstriction and bronchodilatation result in a definite series of events that finally affect the intrapleural pressure. Bronchoconstriction is followed by an increase in the carbon dioxide tension in the alveoli and blood, in the inspiratory muscular activity, and in the average thoracic size, and by

a more negative intrapleural pressure. Bronchodilatation is followed by a decrease in the carbon dioxide tension in the alveoli and the blood, in the inspiratory muscular activity, and in the average size of the chest, and by a more positive intrapleural pressure.

Carbon dioxide inhalations aid in combating of postoperative pulmonary complications. The hyperpnea increases the expansion of the lungs and makes the patient cough frequently, thus expelling pulmonary secretions. In addition, the carbon dioxide causes bronchial dilatation, an increase of the thoracic girth, and a negative intrapleural pressure, all of which combat the tendency toward local and general collapse of the pulmonary tissue.

Experimental surgical procedures such as pressure on the abdomen, the administration of ether, opening of the abdomen, traction on the stomach, and evisceration were followed by an increase in the intrapleural pressure and in the mean thoracic girth. The handicap placed upon the respiratory mechanism by such procedures may be counteracted in part by inhalations of carbon dioxide.

SAMUEL PERLOW, M.D.

Bonriot. Decortication of the Lung for Chronic Empyema (Decortications pulmonaires pour empyeme chronique). *Lyon chir.*, 1931, xxviii, 808.

The author reports two cases of chronic empyema in which decortication of the lung was done. In the first case a secondary Schede operation was necessary for cure. In the second case decortication alone was successful. The author points out the advantages of decortication of the lung and advises its use when possible.

FRANK B. BEFFY, M.D.

ESOPHAGUS AND MEDIASTINUM

Sturtevant, M., Shapiro, L. L., and Wallace, R. P. Traction Diverticulum of the Esophagus. *Am. J. Roentgenol.*, 1932, cxvii, 187.

The authors report ten cases of traction diverticulum of the esophagus. The diagnosis was made by roentgen examination.

The traction diverticulum was first described by Rokitsansky in 1840. It differs distinctly from the pulsion diverticulum described by Zenker in 1876. Rokitsansky attributed it to a pulling out of the esophageal wall by the adhesion of an inflamed bronchial lymph node and subsequent connective tissue contraction.

Traction diverticula are almost always found on the anterior or lateral esophageal wall where the esophagus comes into contact with the lymph nodes that are present about the bifurcation of the trachea. When these glands are tuberculous the process may involve the adjacent esophageal wall. As the scar contracts a cone-shaped bit of the esophageal wall is pulled out with its apex usually tilted upward. The great majority of traction diverticula are associated with tuberculosis of the lymph glands around the trachea.

and the expectoration and frequently by a necrotic sputum. These changes are usually noted within ten days.

The following cases reported by Gullotta were included. They included thirty four cases of tuberculosis and eight of pulmonary abscess. In all pneumonia was treated first but failed to cause improvement. The incidence of cure was highest in the cases of wet tuberculosis. Of the cases of apical lesions cure or improvement resulted in about one third.

The author concludes that if the cases are properly selected pharyngitis should be performed as soon as it becomes evident that pneumonia will be of no benefit. Pharyngitis is most effective in cases of early tuberculosis to cavitate and local tuberculosis and as preparatory treatment for thoroplasty. It is simple to perform and need not be limited to specialists.

AL R MD

When I Th B t rilogy of Ab s of th Lu g
and M thod fo Its Study A h S t 3

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B H S I g r I J nd G ah m E A
Bro hlect is I Et l ogy a d I th l ogy
I Th S I 23 34

The authors discuss first the etiology of bronchiectasis in childhood and its natural history. They present a case of a male infant with a congenital cystic disease of the lungs, pulmonary emphysema, and congenital atelectasis of the right lung.

mediastinal swelling compression of the lung
thoracic deformities and syphilis

In the adult brachyacta is may be due to the following factors

- 1. Intrabronchial foreign body: bronchial stenosis and benign and malignant bronchial tumors with the added factors of cough, forced inspiration and infection.

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3. Peribronchial diseases and enlarged glands
adhesions tumors and enlarged thoracic organ
aneurysms

4 Pulmonary pneumonia a pulmonary abscess
tuberculosis abscess tumor other osseous
lung disease emphysema

6. Conditions of the thoracic wall and form of the
a. bending of the thoracic cage

EARL O. LAYME, M.D.

B l n H Sing J J p d G ham E A
B h l t a l s H C l n i c a l Feat a d
D i g n o s i J T h S e q u e n c e

Bronchectasis occurs with equal frequency in males and females and is most common before the fortieth year of age. The symptoms may be present for many years but the patient seldom notices them.

In 537 pe e t f th auth case th l) n
wa un lateral Co g n al bronchi cta s is often
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d i s o n l y a t h m a n u f a c t u r a n f t h p r c e s
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The diagnosis is mild but under development unless it possible to determine the relation of the disease to the distribution of the dilatations the degree of fibrosis is the nature of the process and the presence or absence of local systematic complications. A good medical history is of the utmost importance. The patient is a young man and to regard himself as a sufferer from a very slight and general influenza infection and

pneumonia consequent upon exanthemata and pertussis, but also regarding conditions of various systems other than the respiratory tract.

There are no truly typical physical findings. The signs may be suggestive of areas of atelectasis and cavitation. There may be increased whisper or diminished breath sounds. Rales are nearly always noted. Hypertrophic osteo-arthritis is frequently present.

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The existence of a relationship between diseases of the nasal sinuses and pulmonary suppuration has been demonstrated comparatively recently and its importance is now being recognized.

EARL O. LATIMER, M.D.

Brill, S., Prinzmetal, M., and Brunn, H. Factors Altering Intrapleural Pressure and Their Clinical Significance. *J Thoracic Surg*, 1932, 1, 2-3.

The authors have made a study of the various factors affecting intrapleural pressure and the relationship between intrapleural pressure and thoracic girth.

Following the administration of bronchodilating drugs such as epinephrin and atropin the intrapleural pressure became more positive and the thoracic girth decreased. Bronchoconstricting drugs such as eserin and pilocarpin nitrate caused a decrease in the intrapleural pressure and an increase in the thoracic girth. The inhalation of carbon dioxide resulted in a more negative intrapleural pressure and an increase in the thoracic girth similar to that produced by bronchoconstricting drugs.

From these findings and the observations of other investigators with regard to bronchodilatation following the inhalation of carbon dioxide the authors conclude that there are two mechanisms in the hyperpnea associated with the inhalation of carbon dioxide: (1) a bronchodilatation which facilitates the exchange of air, and (2) an increase in the mean thoracic girth, more negative intrapleural pressure and greater distention of the lungs, which increase the respiratory exchange.

From their experiments they conclude that bronchoconstriction and bronchodilatation result in a definite series of events that finally affect the intrapleural pressure. Bronchoconstriction is followed by an increase in the carbon dioxide tension in the alveoli and blood, in the inspiratory muscular activity, and in the average thoracic size, and by

a more negative intrapleural pressure. Bronchodilatation is followed by a decrease in the carbon dioxide tension in the alveoli and the blood in the inspiratory muscular activity, and in the average size of the chest, and by a more positive intrapleural pressure.

Carbon dioxide inhalations aid in combating postoperative pulmonary complications. The hyperpnea increases the expansion of the lungs and makes the patient cough frequently, thus expelling pulmonary secretions. In addition, the carbon dioxide causes bronchial dilatation, an increase of the thoracic girth, and a negative intrapleural pressure, all of which combat the tendency toward local and general collapse of the pulmonary tissue.

Experimental surgical procedures such as pressure on the abdomen, the administration of ether, opening of the abdomen, traction on the stomach and evisceration were followed by an increase in the intrapleural pressure and in the mean thoracic girth. The handicap placed upon the respiratory mechanism by such procedures may be counteracted in part by inhalations of carbon dioxide.

SAMUEL PERLOW, M.D.

Bonniot. Decortication of the Lung for Chronic Empyema (Decortication pulmonaires pour empyeme chronique). *Lyon chir*, 1931, XXVIII, 803.

The author reports two cases of chronic empyema in which decortication of the lung was done. In the first case a secondary Schede operation was necessary for cure. In the second case decortication alone was successful. The author points out the advantages of decortication of the lung and advises its use when possible.

FRANK B. BERRY, M.D.

ESOPHAGUS AND MEDIASTINUM

Sturtevant, M., Shapiro, L. L., and Wallace, R. P. Traction Diverticulum of the Esophagus. *Am J Roentgenol*, 1932, XXVII, 187.

The authors report ten cases of traction diverticulum of the esophagus. The diagnosis was made by roentgen examination.

The traction diverticulum was first described by Rokitsansky in 1840. It differs distinctly from the pulsion diverticulum described by Zenker in 1876. Rokitsansky attributed it to a pulling out of the esophageal wall by the adhesion of an inflamed bronchial lymph node and subsequent connective tissue contraction.

Traction diverticula are almost always found on the anterior or lateral esophageal wall where the esophagus comes into contact with the lymph nodes that are present about the bifurcation of the trachea. When these glands are tuberculous the process may involve the adjacent esophageal wall. As the scar contracts a cone-shaped bit of the esophageal wall is pulled out with its apex usually tilted upward. The great majority of traction diverticula are associated with tuberculosis of the lymph glands around the trachea.

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SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Ochsner, A., and Garside, E. Peritoneal Adhesions, Their Prevention by the Use of Digestive Ferments *Surg, Gynec & Obst*, 1932, liv, 338

In the presence of acute abdominal infections peritoneal adhesions are life saving. If it were not for the characteristic reaction of the peritoneum to trauma, operations on the intestinal tract would probably be uniformly fatal. After the fibrinous adhesions have served their purpose, they are usually removed by a digestive process, probably the action of the tryptic ferments derived from the polymorphonuclear leucocytes. Occasionally, however, there occurs, as the result of continued trauma or because of an individual predisposition toward the development of adhesions, an organization of the fibrinous adhesions which may seriously handicap the patient and even menace his life. For this reason a method of preventing the re-formation of adhesions after their division is desired.

Many substances have been employed in an attempt to prevent the formation or the re-formation of adhesions. In the authors' experiments, papain, a vegetable digestant, and trypsin, an animal digestant, were used. It was found that papain solutions were more stable than trypsin solutions, retaining their activity for a much longer time, and that the addition of serum decreased the activity of the papain solutions much less than the activity of the trypsin solutions. The experiments were performed on 252 dogs and 28 rabbits. Thirteen dogs and 12 rabbits were used to determine the reaction of the digestive ferments on the peritoneum. In experiments on 239 dogs and 16 rabbits solutions of the enzymes were introduced intraperitoneally in an attempt to prevent either the formation or the re-formation of adhesions. In every instance a sterile peritonitis was produced by severely traumatizing the antimesenteric portion of the small bowel by briskly rubbing it with dry gauze until the surface was denuded of its peritoneum and then painting the denuded area with tincture of iodine. In the majority of the experiments the digestant solution was introduced into the peritoneal cavity after division of already existing dense peritoneal adhesions produced as the result of the peritoneal trauma described. In a few, however, it was introduced into the peritoneal cavity at the time of the peritoneal trauma to prevent the formation of peritoneal adhesions. The results obtained are summarized as follows:

Of 11 control animals in which, after division of existing adhesions, nothing was introduced into the peritoneal cavity, dense adhesions re-formed in all. In 15 animals in which, following the division of

adhesions, normal saline solution was introduced into the peritoneal cavity, adhesions recurred in 93.32 per cent and in 86.66 per cent the adhesions were classified as being definite or dense. In 24 dogs in which, following the division of adhesions, papain was introduced into the peritoneal cavity, adhesions recurred in only 34.07 per cent. The adhesions were classified as of Grade 1 and Grade 2 (on the basis of a grading of 1 to 4) in 20.45 and 4.45 per cent respectively. In only 9.08 per cent were the adhesions definite and dense. In 50.89 per cent there were few or no adhesions. In 26 dogs in which trypsin solution was introduced into the peritoneal cavity after the division of adhesions, adhesions recurred in 84.54 per cent. In 26.9 per cent the adhesions were classified as of Grade 1 and in 57.63 per cent they were definite and dense.

In the presence of infection the digestive ferments were of no value to prevent the formation or re-formation of peritoneal adhesions, probably because in infections the trauma is continued.

The authors conclude that the use of the digestive ferments is indicated especially in cases in which a "keloid tendency" or an "adhesion diathesis" is present and those in which the prevention of the re-formation of adhesions is especially desirable.

The digestive ferments have been used in 14 clinical cases, but the period of observation is still too short to warrant an opinion regarding the results.

Gucci, G. The Absorption of *Bacillus Coli* by the Normal Peritoneum (*L'assorbimento del bacterium coli da parte del peritoneo normale*). *Polidicta*, Rome, 1932, xxxv, sez. chir. 44.

Gucci studied experimentally the absorption of *bacillus coli* by the normal and inflamed peritoneum. He found that colon bacilli injected into the normal peritoneal cavity passed rapidly and directly into the blood stream and lymphatics.

The production of a well-developed plastic peritonitis hindered the passage of the bacteria into the lymphatics and blood stream. Peritonitis of milder grades impeded the entrance of the bacilli into the blood stream, but did not prevent their migration into the lymphatics and thence into the thoracic duct.

In experiments in which the thoracic duct was sectioned prior to the intraperitoneal injection of the bacteria, the blood stream remained sterile.

The presence of a transudate favored rapid absorption of the colon bacilli into the blood and lymph streams.

The author concludes that in generalized infective peritonitis the bacteria are not absorbed by the blood or lymph vessels of the inflamed peritoneum, and that the absorption of the peritoneum is in-

Traction diverticula of the esophagus may be caused also by mediastinal conditions. The culum musculi is usually thinned out at the top of the diverticulum by connective tissue. The mucous membrane may be involved in the inflammation.

A traction diverticulum may gradually enlarge and may be irritated by food ingestion.

Stricker has reported thirty-six cases in which a lymph node participated in the diverticulum. This may ultimately give rise to inflammation of the mediastinum, pericardium, pleura or lung. Gangrene of the lung is a common complication of such a diverticulum.

Ritter has reported five cases of diverticulum associated with cancer.

When a diverticulum is treated as a traction diverticulum should be watched and the patient warned to maintain his food.

Traction diverticula of the esophagus seem to be fairly common but are rarely discovered during life. They have been found in from 4 to 10 percent of autopsies on adults.

As a rule they cause no symptoms. They are situated that they do not hold a content of food well and therefore are usually not visible in the roentgenogram. If a dilated esophagus may be used routinely in the examination of patients with esophageal disturbances they would be found more frequently. This method consists of the preparation of a smooth-tipped part of the edge of a cecum. The patient should be examined in both the right and the left oblique positions. Five to six inches above the pelvis the position with the pelvis.

Traction diverticulum of the esophagus is most common site for the insertion of a

FRANK B. B. M. D.

equilibrium, local infection, and lesser functional difficulties of the first few days after the operation

SAMUEL J. FOGELSON, M D

Toennis, W, and Brusis, A Changes in the Morphological Blood Picture in Acute and Chronic Intestinal Obstruction (Veränderungen des morphologischen Blutbildes bei akuter und chronischer Darminhaltsstauung) *Deutsche Zeitschrift für Chirurgie*, 1931, CCXXXIII, 133

The morphological blood picture in dogs with experimentally produced intestinal obstruction was compared with the morphological blood picture and its physiological variations in normal dogs. Acute obstruction was produced by dividing or ligating the small bowel, and chronic obstruction by forming blind pouches according to the method of Toennis and Schmidt.

Acute obstruction was followed by a relative increase of erythrocytes and a constantly increasing leucocytosis with displacement toward the left. The highest values were reached just before death. Control animals, which were also subjected to laparotomy under narcosis but without operation upon the bowel, showed a definite diminution in erythrocytes toward the end of the first week and only a transitory leucocytosis with displacement toward the left associated with the wound healing.

In all of the fifteen dogs with chronic intestinal stasis from the formation of a blind sac in the jejunum, there was a severe anemia, the loss in red cells averaged 2.7 million, and the loss in hemoglobin, 44 per cent. Regenerative forms did not appear, but there was usually a leucocytosis with neutrophilic displacement toward the left. Rapid emaciation occurred in spite of good appetite, and the average duration of life was only sixty-four days (the longest one hundred and twenty-two days). The control animals with proximally closed, i.e., antiperistaltic, blind pouches showed no changes from one hundred and sixteen to one hundred and fifty days after the operation. Of the anemic animals with a blind pouch in the jejunum, severe anemia was relieved in three by extirpation of the pouch. Of five dogs with chronic stasis from the formation of a blind pouch in the ileum, anemia developed in only one and this dog survived one hundred and forty-one days. The others developed no anemia in a period ranging from one hundred and thirty-five to two hundred and seventy-seven days.

The changes in the morphological blood picture in chronic stasis of the jejunum indicate intestinal auto intoxication.

ARTHUR HINZKE (Z)

Prat, D Ileus Occlusion and Intestinal Obstruction (Ileo Occlusion y obstrucción intestinal) *Arch. Fac. de Med., Univ. de Montevideo*, 1932, XVI, 47

Intestinal obstruction in the course of acute appendicitis is relatively frequent and constitutes one of the most important complications of appendicitis. It may be primary, early, or late. It may occur postoperatively or in cases not operated upon. It is

the result of peritonitis or is caused by rough surfaces left in the peritoneal cavity at the time of operation. It may be brought about by bands, adhesions, links or volvulus. In one of the author's cases it was due to prolapse of the small intestine through a postoperative fistula.

The treatment of this complication of acute appendicitis is mostly preventive. Early diagnosis and prompt and proper surgical treatment of appendiceal inflammation are of great importance. The McBurney incision is the incision of choice. Good hemostasis and peritonization, drainage of both the iliac and the pelvic fossae, restoration of intra-abdominal pressure by closure of the incision around the drains, Fowler's position, and measures to prevent dehydration are indicated.

Curative treatment, which aims at re-establishing the intestinal circulation, is surgical. The author emphasizes the importance of gastric lavage. The surgical procedure to be followed depends upon the general condition and the findings at laparotomy. The intestine should be emptied of its contents by aspiration. Witzel's enterostomy, or the formation of a fistula. If the cause of the obstruction cannot be removed, an anastomosis will be necessary.

Intestinal obstruction due to Meckel's diverticulum occurs most frequently in adolescents, and is more common in males than in females. Meckel's diverticulum should be suspected in persons with other congenital malformations, especially anomalies of the umbilicus, and should always be looked for when the appendix is found normal at operation for supposed acute appendicitis. It is responsible for about 6 per cent of the cases of intestinal obstruction. Diverticular ileus may be acute or chronic. The mechanism of the acute type may be (1) strangulation by the diverticulum acting as a band or knot, (2) linking by traction of the diverticulum, (3) intussusception when the diverticulum is free at one end, (4) volvulus, or (5) a combination of these factors. The chronic form is due to narrowing of the bowel lumen at the point of attachment of the diverticulum. To this may be added foreign bodies, torsion, or inflammation.

The treatment of diverticular obstruction is the same as that of obstruction of other types. The technique for removal of the diverticulum is the same as that for removal of the appendix, but when the bowel to which the diverticulum is attached is diseased, intestinal resection may be necessary.

Among the most common causes of intestinal obstruction are bands and adhesions. Bands may be pathological or embryonic. Embryonic bands include the superior mesenteric vessels, the remains of the omphalomesenteric vessels and probably the iliac band of Lane. Pathological bands and adhesions result from peritonitis or from areas not covered with peritoneum at operation. The obstruction is produced by links, angulations, strangulations, compressions, knots, or rings.

Acute dilatation of the stomach is a syndrome with the characteristics of a high obstruction involving

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M r r i J H T i n f t h e O m n i t u m I t s
C l i n i c I m p o t a n A h S t 93 4

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GASTRO INTESTINAL TRACT

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I A P M D

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4 G t t t m m h m m p l t
p e f r m a d l e s d a g u t f l e c t a t h g a s t c
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5 P f e c t h x m t i s f t h t l p l a
h o c k g a t r r h a g a d t b a f t h d b a s e

equilibrium, local infection, and lesser functional difficulties of the first few days after the operation

SAMUEL J. FOGELSON, M.D.

Toennis, W., and Brusis, A. Changes in the Morphological Blood Picture in Acute and Chronic Intestinal Obstruction (Veränderungen des morphologischen Blutbildes bei akuter und chronischer Darmnhaltsstauung) *Deutsche Zeitschrift für Chirurgie*, 1931, CCXXXII, 133

The morphological blood picture in dogs with experimentally produced intestinal obstruction was compared with the morphological blood picture and its physiological variations in normal dogs. Acute obstruction was produced by dividing or ligating the small bowel, and chronic obstruction by forming blind pouches according to the method of Toennis and Schmidt.

Acute obstruction was followed by a relative increase of erythrocytes and a constantly increasing leucocytosis with displacement toward the left. The highest values were reached just before death. Control animals, which were also subjected to laparotomy under narcosis, but without operation upon the bowel, showed a definite diminution in erythrocytes toward the end of the first week and only a transitory leucocytosis with displacement toward the left associated with the wound healing.

In all of the fifteen dogs with chronic intestinal stasis from the formation of a blind sac in the jejunum, there was a severe anemia, the loss in red cells averaged 2.7 million, and the loss in hemoglobin, 44 per cent. Regenerative forms did not appear, but there was usually a leucocytosis with neutrophilic displacement toward the left. Rapid emaciation occurred in spite of good appetite, and the average duration of life was only sixty-four days (the longest one hundred and twenty-two days). The control animals with proximally closed, i.e., antiperistaltic, blind pouches showed no changes from one hundred and sixteen to one hundred and fifty days after the operation. Of the anemic animals with a blind pouch in the jejunum, severe anemia was relieved in three by extirpation of the pouch. Of five dogs with chronic stasis from the formation of a blind pouch in the ileum anemia developed in only one and this dog survived one hundred and forty-one days. The others developed no anemia in a period ranging from one hundred and thirty-five to two hundred and seventy-seven days.

The changes in the morphological blood picture in chronic stasis of the jejunum indicate intestinal auto intoxication.

ARTHUR HINZE (Z)

Prat, D. Ileus Occlusion and Intestinal Obstruction (Ileo Oclusión y obstrucción intestinal) *An Fac de med, Univ de Montevideo*, 1932, CVI, 47

Intestinal obstruction in the course of acute appendicitis is relatively frequent and constitutes one of the most important complications of appendicitis. It may be primary, early, or late. It may occur postoperatively or in cases not operated upon. It is

the result of peritonitis or is caused by rough surfaces left in the peritoneal cavity at the time of operation. It may be brought about by bands, adhesions, links, or volvulus. In one of the author's cases it was due to prolapse of the small intestine through a postoperative fistula.

The treatment of this complication of acute appendicitis is mostly preventive. Early diagnosis and prompt and proper surgical treatment of appendiceal inflammation are of great importance. The McBurney incision is the incision of choice. Good hæmostasis and peritonization, drainage of both the iliac and the pelvic fossæ, restoration of intra-abdominal pressure by closure of the incision around the drains, Fowler's position, and measures to prevent dehydration are indicated.

Curative treatment, which aims at re-establishing the intestinal circulation, is surgical. The author emphasizes the importance of gastric lavage. The surgical procedure to be followed depends upon the general condition and the findings at laparotomy. The intestine should be emptied of its contents by aspiration, Witzel's enterostomy, or the formation of a fistula. If the cause of the obstruction cannot be removed, an anastomosis will be necessary.

Intestinal obstruction due to Meckel's diverticulum occurs most frequently in adolescents, and is more common in males than in females. Meckel's diverticulum should be suspected in persons with other congenital malformations especially anomalies of the umbilicus, and should always be looked for when the appendix is found normal at operation for supposed acute appendicitis. It is responsible for about 6 per cent of the cases of intestinal obstruction. Diverticular ileus may be acute or chronic. The mechanism of the acute type may be (1) strangulation by the diverticulum acting as a band or knot, (2) linking by traction of the diverticulum, (3) intussusception when the diverticulum is free at one end, (4) volvulus, or (5) a combination of these factors. The chronic form is due to narrowing of the bowel lumen at the point of attachment of the diverticulum. To this may be added foreign bodies, torsion, or inflammation.

The treatment of diverticular obstruction is the same as that of obstruction of other types. The technique for removal of the diverticulum is the same as that for removal of the appendix, but when the bowel to which the diverticulum is attached is diseased, intestinal resection may be necessary.

Among the most common causes of intestinal obstruction are bands and adhesions. Bands may be pathological or embryonic. Embryonic bands include the superior mesenteric vessels, the remains of the omphalomesenteric vessels, and probably the iliac band of Lane. Pathological bands and adhesions result from peritonitis or from areas not covered with peritoneum at operation. The obstruction is produced by links, angulations, strangulations, compressions, knots, or rings.

Acute dilatation of the stomach is a syndrome with the characteristics of a high obstruction involving

the stomach and duodenum. Its exciting cause is not definitely known. The existence of a primary or reflex paralysis of the gastroduodenal segment is admitted, and primary or secondary disturbances of the sympathetic are believed to play a fundamental rôle. The paralytic factors in the production or continuation of the acute dilatation. These factors of the condition appear rapidly dependent on a toxæmia originating in the duodenum. Probably more than one factor is responsible for the toxæmia. The author believes that the theory of mechanical vascular compression on the mesenteric vessels is not absolutely abandoned as cases of obstruction due to such compression have been reported.

Recognition of the condition that most cases of acute dilatation of the stomach there are alkaline characterised by an increase in the alkaline retention of nitrogenous substances and marked hypochlæmia. Appropriate treatment of the alkalosis is its prompt and sometimes successful removal. This factor supports the theory that a primary metabolic disturbance causes paralytic of the gastroduodenal segment.

The treatment should be directed first to correct the metabolic disturbance by the intravenous administration of glucose sodium chloride and fluids. The toxin should be eliminated by repeated lavage.

Intestinal obstruction is most common between the fourth and fifth days after operation. It usually develops in the first few days. The treatment usually is medical at first, the diet is withheld, and the patient is kept in the prone position. If the obstruction is complete, the patient is kept in the prone position. If the obstruction is incomplete, the patient is kept in the prone position. If the obstruction is complete, the patient is kept in the prone position. If the obstruction is incomplete, the patient is kept in the prone position.

Volckman, J. Acute Intestinal Obstruction. Case of a woman with a large tumor of the small intestine. The patient was 45 years old, and had been ill for several months. The tumor was found at the junction of the small intestine with the large intestine. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

Morison, P. Lipoma of the Cecum. Case of a woman with a large lipoma of the cecum. The patient was 45 years old, and had been ill for several months. The lipoma was found at the junction of the cecum with the large intestine. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

Selinger, P. Ileocecal Intussusception. Case of a woman with a large intussusception of the ileocecal junction. The patient was 45 years old, and had been ill for several months. The intussusception was found at the junction of the ileum with the cecum. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

Volckman, J. Acute Intestinal Obstruction. Case of a woman with a large tumor of the small intestine. The patient was 45 years old, and had been ill for several months. The tumor was found at the junction of the small intestine with the large intestine. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

with violent intestinal pain, vomiting, and a right meteorism. Rectal examination revealed nothing abnormal but a vaginal examination showed a movable mass was felt in the cul-de-sac. The pulse was 100. A diagnosis of volvulus of the sigmoid was made. The patient was operated on and a small amount of fluid was found in the peritoneal cavity. The intussusception was found at the junction of the sigmoid with the rectum. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

Motourou reports the case of a patient with a long history of intestinal disturbances referred to the right lower quadrant of the abdomen. A diagnosis of chronic appendicitis had been made. The patient became worse and the pain increased. The patient was operated on and a large tumor was found in the right lower quadrant of the abdomen. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

Selinger, P. Ileocecal Intussusception. Case of a woman with a large intussusception of the ileocecal junction. The patient was 45 years old, and had been ill for several months. The intussusception was found at the junction of the ileum with the cecum. It was a large, firm, and well-circumscribed mass. The patient died of the disease.

it should be attempted and supplemented by fixation of the colon. The average mortality of such treatment is a little over 7 per cent. If disinvagination is not possible, the operative procedure must be determined by the conditions found. Resection of the bowel has a high mortality, especially if it is done at the time of the primary operation. Secondary resection after preliminary colostomy is safer. Lateral anastomoses to exclude the intussusception are not recommended.

The authors' conclusions are summarized as follows:

- 1 X-ray examination permits a diagnosis in some cases.
- 2 The character of the onset does not always indicate the gravity of the condition.
- 3 Treatment of intussusception in the adult always requires complicated measures.
- 4 Disinvagination should be tried.
- 5 Associated pathological conditions should be treated.
- 6 If disinvagination is impossible, resection of the bowel should be done in cases of intussusception of the ileum, and exteriorization and colostomy in cases of intussusception of the ileocecal portion of the bowel. In the latter, resection and anastomosis are dangerous.

KELLOGG SPEED, M D

Friedman, M. Periarthritis Nodosa as a Cause of Perforation of the Small Bowel (Periarthritis nodosa als Ursache der Duenn darmperforation). *Volchr Arch*, 1931, xxi, 354.

Periarthritis nodosa is a rare disease. In the literature of the world only 200 cases have been reported and in Russian literature only 20. Even in this small number the pathologico-anatomical study was insufficient. An accurate diagnosis can be made only by detailed histological examination. The symptoms are manifold. On the basis of the symptoms, Melnikov-Razvedenkov distinguished isolated involvement of single parts such as the brain, spleen, lungs, heart, kidneys, stomach, intestines, skin, nerves, and muscles. In the author's opinion it is more correct to consider the disease as involving certain organs more severely than others rather than as affecting isolated organs.

The condition is about 3 times as common in women as in men and occurs most frequently between the ages of twenty and forty years.

It has been attributed to a specific unknown agent to syphilis, and to various conditions such as angina, gonorrhoea, scarlet fever, rheumatic fever and sepsis.

The author reports the case of a woman twenty-nine years old who had suffered for two years from attacks of severe colicky pain in the abdomen and was operated upon for peritonitis. Laparotomy revealed an annular narrowing of the jejunum about 1 meter from the plica duodenojejunalis. In the center of this area there was a perforated ulcer. Resection of the involved segment of intestine was followed by recovery. During the patient's convalescence, evidence of pylorospasm was noted.

Macroscopic examination of the specimen removed at operation revealed extreme narrowing of the lumen. As there was no evidence of scar formation in the wall of the bowel in the vicinity of the ulcer, the author concluded that the stenosis was spastic. Microscopic examination revealed periarthritis nodosa in the wall of the ulcer and especially around the mesenteric vessels.

Simple ulcer of the small bowel also requires further pathological study. The lesion is rare. It may remain clinically latent, cause indefinite abdominal pains, suggest appendicitis, or lead to perforation peritonitis. It has been attributed to various obliterating processes in the blood vessels. The author suggests that periarthritis nodosa may be a cause.

G ALIPOV (Z)

Ladd, W E. Congenital Obstruction of the Duodenum in Children. *New England J Med*, 1932, ccvi, 277.

The first case of congenital obstruction of the duodenum was reported by Calder in 1752. Since then, numerous articles on the condition have appeared in the literature, chiefly autopsy reports. In 1889 Bland Sutton stated that the occlusion always takes place at the site of an embryological event. He attributed the duodenal atresia to excess of closure while the liver was being formed. Others have regarded syphilis and fetal peritonitis as responsible. Timely and suitable surgical intervention offers the only chance for cure.

Congenital obstruction of the duodenum is a manifestation of faulty embryological development. It is of two types, the intramural or intrinsic type caused by septa within the lumen of the bowel, and the extrinsic or extramural type due to external pressure on the bowel. In the 6- or 7-mm embryo the duodenum presents a well-defined round lumen lined with epithelium. At a later stage of embryological development the epithelium proliferates, forming vacuoles within the lumen. As this process continues, the original lumen becomes bridged and subdivided by septa. The septa completely block the passage from the stomach to the duodenum. If development is arrested at this stage, the lumen of the duodenum becomes partially or completely obliterated. With normal development, the vacuoles become confluent and the central lumen is re-established. The villi are the only remaining evidence of the projections between the vacuoles.

According to Ladd's observations, the extrinsic type of congenital obstruction of the duodenum is due to incomplete rotation of the bowels. Complete failure of rotation leaves the mid-gut, i.e., the intestine from the fixed portion of the duodenum to the middle of the transverse colon, attached to the posterior abdominal wall by only a very small area at the origin of the superior mesenteric artery. Conditions are then favorable for volvulus of all of the intestine from the duodenum to the middle of the transverse colon. The author found such a

SUMMARY OF CASES

Sex	Age	Symptoms	Type	Operation	Result
M	4	Abdominal pain	I	Partial gastrectomy	Recovery
M	week	Abdominal pain	I	Partial gastrectomy	Death
M	month	Abdominal pain, vomiting, diarrhoea	I	Partial gastrectomy	Recovery
F	day	Abdominal pain	E	Anterior resection	Death
F	month	High fever, leukocytosis	E	Anterior resection	Recovery
M	1	Abdominal pain, diarrhoea	E	Anterior resection	Recovery
F	month	Acute peritonitis	E	Anterior resection	Recovery
M	day	Abdominal pain	I	Anterior resection	Death
M	month	Abdominal pain, diarrhoea	E	Anterior resection	Recovery
F	month	Abdominal pain	E	Anterior resection	Recovery
F	month	Abdominal pain	I	Anterior resection	Recovery

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Th l l j m p t m f m t m p t n a n t h
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t n d d u d m d b t t t t t h t h p n
c e t i c a n d b l r y s c r e t n

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m l l d s t a l l o o p n t a d v a n s b l The f i l t
o r a n d o e t u a s h l d b d o n e w t h c o o
c h o m e t g u t a n d t r e n f r e e d t h a C l l
t t h f f e a l k f s b d l c a t t u
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In a b a b s w t h l v u l d t o g t l f l y
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l b a t f e c a l a t t c h m t
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S t h f i t t d f M y k g o m b l l
f t h d d u m h b e m a g e d e t t y
n g t t t t p a t l g y A f t h g h c o m p l t
t t n d f t f t h d l m a r l t l
m m n s d g f t g e n v m t t p
d s m p t m n l y a t a n c e s F t a l
d d e o t g f f u l t y u t o n f t h
t o m h a n d f l t e t n f t h e b l y d
p c t j s u l f m k k g A t h y a
l l y l d b v t h t l d u b i s p o s t
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t h t e c a s b r d b y B e c l i t w
p e t d p o

I t h t l j p a s i m b l i t y f t h d o
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g u l a t o t

All of the anastomoses proposed as treatment neglect the angulation. It is essential to suspend the first portion of the duodenum and the pylorus. Various operations have been suggested for this purpose. Fixation of the duodenum to the anterior abdominal wall creates a painful adhesion. Shortening of the lesser omentum cannot be expected to give permanent support to the organs and seems to have been abandoned by its originator, Mivake for a technique comparable to the *cœcoperon* of Wilms. In the latter procedure the duodenum is sutured to the lateral lip of a vertical incision in the posterior parietal peritoneum. This operation has not given entire satisfaction because the suspension cannot be sufficiently high and the first portion of the duodenum remains free to be pulled downward by the stomach.

The authors propose combining this *duodenopexy* with suspension of the pylorus by means of the round ligament of the liver. In the technique they describe the round ligament is separated from the falciform ligament by incising the serosa and sectioning the parietal end, care being taken to avoid terminal branches of the epigastric arteries. From right to left, the round ligament is sutured into the upper border of the first portion of the duodenum, the pylorus, and the antrum. The free end of the ligament is sutured to the deep surface of the insertion of the left rectus muscles at the costal margin.

The authors state that this operation is simple and quickly performed, and in one case has given excellent results. In roentgenograms the pylorus and duodenum are seen in their normal positions. The technique is shown in five plates.

When a mobile duodenum is merely one manifestation of general visceroptosis, no operation of any type can be recommended.

ALBERT F. DE GROAT, M.D.

Berla, E. The Diagnostic Value of Roentgen Examination of the Appendix in Surgery (Sul valore diagnostico dell'esame radiologico dell'appendice in chirurgia) *Clin. chir.*, 1931, vii, 1202.

The author reviews the history of the roentgenological study of the appendix from 1809 up to the present time and discusses the physiology of the organ, the various theories regarding its importance, its contractile, secretory, and protective functions (protection by its lymphoid tissue against intestinal invasion), its function as an eliminator of organisms, and its endocrine function.

Of 163 cases in which Berla attempted to examine the appendix with the X-ray with the use of a barium mixture, the shadow of the organ was seen at the first examination in 83 and in some of those in which the findings were negative at the time of the first examination a distinct shadow of the appendix was obtained at a second examination. When irregularity of form, links, spirals, constant changes of position, or an irregular filling shadow of the lumen was found, the presence of a pathological

condition was assumed. The diagnosis of functional disturbances was based on the emptying time of the organ but no definite time schedule could be determined. Painful points on the abdomen where the appendix shadow was projected and an irregular form of the organ were regarded as indirect evidences of disease. The author reports and discusses typical cases of different clinical types of subacute and chronic appendicitis.

In conclusion he says that the roentgen findings cannot be regarded as of absolute value because from 60 to 90 per cent of normal appendices are visible on roentgen examination. X-ray examination of the appendix is rendered difficult by many factors which are hard to eliminate in such an organ and the differences in the technique of the examination render statistics valueless. Therefore in the decision as to whether operation is indicated or not the roentgen findings must be interpreted in the light of the clinical findings. KELLOGG SPEED, M.D.

McKenty, J. Acute Appendicitis. *Canad. J. Med.*, 1932, xvi, 50.

In a review of 401 consecutive cases of appendicitis it was found that the results were good in uncomplicated cases and cases with localized abscess or localized peritonitis, but unsatisfactory in those of diffuse peritonitis.

Reports on 17,916 cases published by American and British surgeons since 1920 show that the average mortality was 6 per cent. Sixty per cent of the deaths were due to diffuse peritonitis.

Immediate operation in cases of appendicitis with diffuse peritonitis has a mortality of 31.9 per cent.

There is still a lack of statistics to justify conclusions as to the advisability of immediate operation or treatment by the Ochsner method in cases of diffuse peritonitis, the condition constituting the most important problem in appendicitis.

WILLIAM E. SHACKLETON, M.D.

Moreno, I. G. Pseudomyxoma of the Appendix (Pseudomyxoma del apendice). *Arch. argen. de enferm. d. apar. d. gest.*, 1931, vii, 53.

Moreno reports a case in which when the sac of an inguinal hernia on the right side was opened at operation white, gelatinous, translucent material was found in the peritoneal cavity. The appendix could not be discovered. In its place was a large tumor of the cecum which necessitated ileocolic resection. The specimen did not correspond to any of the descriptions of pseudomyxoma of the appendix in the literature for in the cases on record the fundamental lesion was a hyperplasia of the glandular layer of the appendix whereas in this case there was a blastomatous new growth—a mucous cystadenoma of the appendix.

Pseudomyxoma of appendicular origin is of three types: (1) pseudomyxoma of the appendix due to glandular hyperplasia; (2) pseudomyxoma of the appendix due to adenomatous formation; and (3)

pseudomyxoma of the peritoneum resulting from one of the former conditions

From the findings of microscopic examination, it is concluded that the wall of the appendix contains a series of glandular proliferations of typical epithelial cells which are of a cystic character and filled with mucous material. He believes that in the mucosa of the appendix there are chromatinated foci and that the adenomatous new growth occurs as the result of repeated epithelial changes of this type.

Pseudomyxoma of the appendix is most common between the ages of thirty and sixty years and occurs more frequently in males than females. Race of special importance in its incidence. What is the result of glandular hyperplasia the chief cause is probably inflammation. To explain the origin of the mucocele the Cohnheim and Ribbert and Virchow theories are necessary. Iliomyxoma of the appendix due to glandular hyperplasia the chronic inflammatory state of the mucosa which tend to obliterate the caecal lumen of the appendix lead to the formation of the mucocele. mucocele is a chronic process. It is found in the polypoid lesions of the appendix. To these is added the hyperproduct of the mucosa and retention of the mucocele in the lumen of the appendix which results in the formation of a mucocele. In the author's opinion perforation causes the ultimate of the process of the mucocele which the cyst.

Pseudomonas is the pathogenic
monocytic symptoms. A positive diagnosis
possible by a cental

Menno divides the evolution of the tradition into three tales as follows:

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The treatment is good and the prognosis is good.

Nowicki S Rectal Polypoid L pol po tal)
Rem d k P q1 l o

To this case of rectal polyp collected from the literature the author adds case of a woman of 40 years of age who was treated surgically.

The disease occurs most commonly in the third decade of life. The net is not cute and the

bismuth may stop the hemorrhage. Electrocoagulation is often helpful.

In severe cases the rectum may be resected by the combined abdominosacral route, but the mortality of this operation is very high. If operation is to be performed it should be done early.

KELLOGG SPEED, M D

Novi, M. The Diagnosis, Treatment, Anatomico-pathological Findings, and Results in Fifty-Seven Cases of Carcinoma of the Rectum (Diagnosi, cura, reperto anatomico patologico ed esiti del cancro rettale desunti dallo studio di 57 casi). *Ann. ital. di chir.*, 1931, 7, 1245, 1589.

Novi reviews fifty-seven cases of carcinoma of the rectum which were observed in the Institute of Clinical Surgery of the Royal University Hospital of Bologna in the period from 1920 to 1930. In none of the cases was radiotherapy given at the Institute. In one of them obstruction occurred during radium treatment elsewhere. The author discusses the anatomical and pathological findings in the cases.

The majority of the patients were men more than fifty years old. Twenty per cent gave a definite immediate family history of malignant tumor. Thirty-four were operated upon and twenty-three were inoperable. In the cases of eight whose condition was inoperable a colostomy was done to relieve obstruction. In the cases operated upon, the mortality was about 14 per cent. Most of the deaths were due to infection. Of the patients who survived, 50 per cent lived for more than a year, 20 per cent lived for three years, and two have lived for more than five years.

Novi favors the coccygeoperineal approach to the tumor.

In the study of sections made from the neoplasms it was found that in about half of the cases the tumor was an annular adenocarcinoma which usually involved the rectosigmoid and was of cylindrical-celled type.

EUGENE T LEDDY, M D

LIVER, GALL BLADDER, PANCREAS, AND SPLEEN

Rossi, A. The Atonic Gall Bladder and the Strawberry Gall Bladder. *Am. J. Roentgenol.*, 1932, 25, 205.

Atony of the gall bladder is characterized by loss or attenuation of the contractile power of the gall bladder walls followed by stagnation and concentration of bile and collapse and atrophy of the gall bladder walls, especially the muscular coat. This condition, known to anatomists and recognized clinically, was described as a separate entity by Chirav, Pavel, and Milochewitch as a result of studies with the duodenal sound. It is to be found especially in ptotics, persons who lead a sedentary life, and neuropathics. At times it occurs in persons with disease of the central nervous system such as tabes. It seems to be discovered with equal fre-

quency in both sexes, and is most common between the ages of twenty and sixty years. Pregnancy is not a factor in its causation. Its total duration is uncertain because frequently the patient is sent for study several times in a period of years with various diagnoses such as neuropathy, gastropathy, and cholecystopathy.

There is no fever. The main symptoms complained of are those of biliary dyspepsia and digestive vagotonia. These include anorexia, a sensation of weight and swelling after meals, a dull and generally not severe continuous pain along the costal border which at times becomes worse and radiates posteriorly, nausea with sometimes the vomiting of bile, and constipation with occasional attacks of diarrhoea. The stools are discolored and may be soapy or sandy, but on chemical examination are found to contain a large quantity of bile pigment. Headache is always present and is accompanied by deterioration of the general condition.

Subicterus is rare. In no case is there marked jaundice with noteworthy quantities of bile pigment in the urine. The liver is always within the normal limits, but may be lower than normal. Ptosis of the liver is generally associated with general viscerop-tosis. The spleen is compressed. The gall bladder is frequently enlarged and low, and as the abdominal walls are often relaxed and thin, it can frequently be palpated. It is found to be tender, but regular and movable. On repeated examinations of the same patient, the gall bladder will be found to present the same characteristics almost constantly, but slight massage will often result in a decrease of its size.

With a duodenal tube, abundant, thick, very dark bile is obtained. At times, the introduction of the tube into the duodenum is sufficient alone to cause emptying of the gall bladder, but occasionally the use of peptone, a solution of magnesium sulphate, or even pilocarpin will be necessary.

On direct roentgen examination the shadow of the gall bladder is often seen, but stones are not visualized. Frequently, ptosis of the abdominal viscera, especially the liver, right kidney, and spleen, is apparent. When the opaque meal reaches the pyloroduodenal region, ptosis of that part of the gastrointestinal tract also becomes evident. A marked decrease in the tonus of the stomach and in gastric peristalsis has been observed. Even when there is no marked displacement of the pylorus an atonic dilatation of the stomach with delayed emptying is noted constantly, although the contractions of the pyloric region and duodenum may be regular.

In the Graham test, maximum visibility of the biliary tract, which is reached after from eight to ten hours, shows the gall bladder to be dilated and ptosed. When the patient is erect, it has the shape of a pear or a banana, and when the patient is in the prone position it becomes oval. It is lower than the lower border of the liver. Its shadow is uniform and regular in outline, but is paler than that of the

Examination revealed a double Kernig sign with exaggeration of all of the reflexes. There was no ascites. At operation, the spleen was found to fill the left half of the abdomen. Splenectomy was done. Roentgenograms showed typical changes in the femora, tibiae, and humeri and the proximal halves of the radii and ulnae. Later the patient developed spasticity of both legs and arms suggesting cerebral hæmorrhage. She died at the age of seven years.

The second case was that of a boy of three years. At the time this patient was admitted to the hospital his abdomen was so large that he was unable to walk. The abdominal enlargement was first noted when a cast applied for four weeks in the treatment of a fracture of the iliac bone became too tight. This patient also had cerebral symptoms with spasticity, Kernig's sign, ankle clonus, and frequent

nosebleed. Splenectomy was done. The spleen weighed 550 gm and presented the typical microscopic appearance of Gaucher's disease. After the operation the spasticity of the extremities and the visual defect, which was an early complaint as in the first case, became worse. The patient died at the age of six years with symptoms similar to those presented by his sister.

The third case was that of a child of fifteen months who showed enlargement of the abdomen, spleen, and liver and prominence of the veins over the anterior surface of the trunk. A tentative diagnosis of Gaucher's disease was made on the basis of these findings and symptoms similar to those in the other cases, but the parents refused hospitalization. After five months of weekly intraperitoneal injections of whole blood and dietary treatment, the child died of bronchopneumonia.

G D DELPRAT, M D

GYNECOLOGY

UTERUS

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to the inflammatory mass on the right side. Operation consisted of a right salpingectomy and a left salpingo oophorectomy with resection of a part of the intestine, a part of the bladder in the region of the fistula, and a part of the uterus.

In the third case there was a pelvic abscess which perforated into the vagina and bladder. This case was treated conservatively.

All of the patients recovered.

From his own observations and those of others the author comes to the following conclusions:

1 Vesico adnexal fistulae occur more frequently than is reported in the literature.

2 In the presence of prolonged suppuration of the pelvic organs a complete urological examination should be made.

3 Vesico parametrial fistulae have a tendency to close spontaneously by cicatrization and sometimes do not require radical surgical interference.

4 In the presence of a vesico-adnexal fistula, operative interference is indicated.

5 The operative interference should be done by abdominal section. Complete removal of the suppurative mass and resection of the bladder wall containing the fistula down to the healthy tissue are necessary to obtain a good result.

6 No intraperitoneal packing should be used in the operation on suppurative adnexa. To increase the local resistance a certain amount of mixed vaccine, the streptococcus vaccine of Besredka should be poured into the peritoneal cavity before it is closed.

7 A bladder catheter should be left in place after the operation to place the bladder at rest and prevent the transudation of urine into the wound.

ISAAC ANDRUSSIER, M D

Jahkola, A. A Contribution on Primary Carcinoma of the Fallopian Tubes. Three New Cases, Two With Permanent Recovery. (Beiträge zur Kasuistik des primären Tubenkarzinoms. Drei neue Fälle, davon Zwei mit dauernder Heilung.) *Acta Soc. med. Fennicae Duodecim*, 1931, xvi, No. 2.

The first case reported by the author was that of a widow aged fifty-three years who had given birth to a child at the age of nineteen years and had had no abortions. Operation disclosed on the right side a hydrohematosalpinx with a papillary formation on the inner surface. On microscopic examination, the papillary growth was found to be a very malignant papillo alveolar carcinoma which had partly infiltrated the underlying tissues. There was no malignancy elsewhere. In the seven years since the operation the patient has been continuously well.

The second case was that of a woman forty four years of age who had been sterile for fifteen years. She had had leucorrhoea for a long time and recently the discharge had become yellow. For a year she had had intermittent pains on the left side of the abdomen. Following an injury six months before she was seen by the author, the pains had become more severe and urinary disturbances had developed.

Operation revealed on the left side a pseudo-intraligamentous tubo-ovarian cyst and a partly necrotic papillo-alveolar carcinoma completely filling the ampullar part of the tube. There were no metastases, and the tubal wall was entirely intact. In the six years since the operation the patient has been well.

The third case was that of a woman aged forty-eight years who had given birth to a child at the age of twenty-five years and had had no abortions. For two years she had had slight intermittent abdominal pains, and during the last six weeks these had become severe. She was emaciated, but her general condition was fairly good. Operation revealed a tumor mass as large as a man's head, which consisted of a tubo ovarian cyst on the right side, a cystic left ovary, and a few small uterine myomata. On both sides there was a primary papillo alveolar carcinoma in the tube with metastases in the ovary and the pelvic peritoneum and on the surfaces of the intestines. The metastases were not removable. Death occurred two months later.

In all three cases the operation consisted of bilateral extirpation of the adnexa and supravaginal amputation of the uterus.

The etiology of primary carcinoma of the tube is unknown. In the author's first case the carcinoma developed in a hydrosalpinx of inflammatory origin. In the two other cases there were no signs of inflammation, but the long periods of sterility indicated that inflammatory changes in the tubes had been present. The age of the patient may have a bearing on the etiology.

The symptoms are very indefinite. Usually there are intermittent hypogastric pains, which later become more intense and continuous. Colicky pains are considered typical. An amber yellow discharge is also considered characteristic. Hemorrhages occur late or not at all. The urinary disturbances, which sometimes develop early, are attributed to adhesions to the bladder. Constipation, emaciation, cachexia and ascites occur late.

Tubal carcinoma is found most frequently in the ampulla. Its point of origin is the epithelium of the tubal mucosa. The metastases appear most often and earliest in the ovaries, the peritoneum of the pouch of Douglas, and the adjacent surfaces of the gut. They may occur also on the other side, and may be spread by the blood and lymph streams.

The treatment indicated is the earliest and most radical removal possible, followed by irradiation therapy.

LOUIS NEUWELT, M D

Kangas, T. Ovarian Tumors in Childhood and the Symptoms of Their Torsion. (Ueber Ovarialgeschwülste des Kindesalters und ihre Torsionserscheinung.) *Acta Soc. med. Fennicae Duodecim*, 1931, xvi, No. 4.

The author reviews twenty one cases of ovarian tumor in girls under sixteen years of age who were treated at various hospitals in recent years, and

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The author's second case was that of a girl twelve and a half years old who had had her first menstrual period one month previously. On May 20 the menses were due, but did not appear and the vulva began to itch. The next day there were small lesions on the vulva, and the passage of urine caused a pricking sensation. The lesions spread. On May 24 an eruption of small red points appeared, and by May 28 they covered the upper and lower limbs. The temperature reached 20.4 degrees C. Secretion from the base of the ulcer examined on a slide showed crassus bacilli in large numbers. The microscopic field corresponded exactly to the description of Lipschuetz.

PACE

MISCELLANEOUS

London, B. Sarcoma of the Female Genitalia (Ueber Sarkome des weiblichen Genitale). *Monatsschr f Geburtsh*, 1931, LXXXI, 194

In a period of eight years at the Breslau Gynecological Clinic there were 19 cases of genital sarcoma and 1,368 cases of carcinoma. The incidence of sarcoma was therefore 1.4 per cent. Eight (3.4 per cent) of a series of 229 myomata were shown histologically to be sarcomatous. The incidence of sarcoma was greatest during the fifth and sixth decades of life. In one tumor involving the fundus of the uterus a myomyxochondrosarcoma was associated with adenocarcinoma. This case was reported by Fels. The clinical diagnosis of sarcoma is always uncertain, only the histological examination of the tissue is of value.

Among 11 sarcomata which were operated upon there were 9 which involved the uterine wall, 1 myxochondrosarcoma, and 1 sarcoma involving the endometrium. Each of the sarcomata involving the uterine wall was subjected to postoperative irradiation twice. The period of cure ranged from one to five years. The mixed tumor (myomyxochondrosarcoma) and the sarcoma involving the endometrium soon caused death. Of two patients with ovarian sarcoma who were treated by operation one succumbed twenty six days after the operation and the other remained well after one and a half years. Recurrences developed in five cases. Several patients who had been operated upon elsewhere were treated by irradiation, some with favorable and others with unfavorable results. The prognosis is in general unfavorable.

ROBERT MEYER (G)

Fontaine, R., and Herrmann, L. G. The Clinical and Experimental Basis for Surgery of the Pelvic Sympathetic Nerves in Gynecology. *Surg, Gynec & Obst*, 1932, LIV, 133

As the pelvic sympathetic nerves are essentially afferent they regulate the functional co-ordination of the internal genital organs and by reflex action control their vascularity, the secretion of their mucous membranes, and their entire visceral sensibility. Consequently all operations on this system of nerves are directed primarily toward interrupting the ascending pathways of pathological reflexes and

severing the afferent fibers from the internal genital organs to relieve pelvic pain. The cases in which pelvic sympathectomy is indicated may be divided into the following three groups.

1. Cases in which no organic lesion of the genital organs can be found to account for the pelvic pain. Functional dysmenorrhœa characterized by severe crises of pain occurring just before or during the menstrual period and resisting the ordinary gynecological treatment has been found to be influenced most favorably by operations on the pelvic sympathetic nerves.

2. Cases with slight pathological processes in the pelvis which do not react favorably to ordinary gynecological treatment, such as sclerocystic degeneration of the ovaries and persistent pelvic pain following operation. In all cases of mobile retroversion of the uterus or slight sclerocystic degeneration of the ovaries proper medical and non-operative gynecological treatment should be given a trial. If after a reasonable length of time there is no improvement in the symptoms, operative interference should be considered. The pelvic pain can usually be relieved by simple section of the superior hypogastric plexus without sacrifice of any of the internal genital organs. In cases with definite anatomical lesions, correction of the lesions should be done in addition to pelvic sympathectomy.

3. Cases in which the pathological lesion is too extensive for surgical removal, i.e., inoperable neoplasms in the pelvis giving rise to severe pain.

There are four main types of sympathectomies that may be employed: (1) section of the superior hypogastric plexus, (2) section of the ovarian nerves, (3) periarterial sympathectomy of the internal iliac artery, and (4) section or removal of the lower part of the lumbar sympathetic chain of one or both sides.

Of twenty-two patients subjected to resection of the superior hypogastric plexus because of some form of severe pelvic pain, fifteen have had repeated follow up examinations over a long period of time. Six failed to return for a follow-up examination but when they were discharged from the hospital they were completely relieved. One patient died on the second day after the operation. Thirteen of the fifteen patients re-examined stated that they were relieved of all pelvic or abdominal pain. One has remained free from pain for over four years and another has had no recurrence of her symptoms during the two and a half years that have elapsed since the operation. Two received only slight or no benefit from the pelvic sympathectomy.

Of five cases in which a complete pelvic sympathectomy was done for the relief of intolerable pain, it gave relief in all.

In the few cases in which pelvic sympathectomy has been tried for atrophic lesions of the external genital organs the results have been excellent.

In resection of the superior hypogastric plexus the abdomen is opened by a median subumbilical incision or the incision described by Pfannenstiel,

the intestines are packed upward toward the diaphragm and the posterior parietal peritoneum is incised just above the promontory of the sacrum. The nerve filaments which constitute the superior hypogastric plexus are immediately beneath the peritoneum and anterior to the midsacral artery. After all of the filaments have been isolated a suture at least 1 cm long is placed in each main nerve fiber to prevent regression. The posterior peritoneum is then closed by a continuous suture of fine catgut and any necessary complementary operation is done.

In performing sympathectomy on the internal iliac artery the posterior parietal peritoneum is closed just over that artery and the peritoneal tissues are removed. After completion of the operation the peritoneum is closed with fine catgut.

The steps of the complete pelvic sympathectomy performed for the relief of pain due to inoperable

neoplasms in the pelvis are as follows: (1) incision of the posterior parietal peritoneum just over the lower portion of the abdominal aorta; (2) removal of all of the sympathetic nerves of the pre-aortic plexus from the origin of the inferior mesenteric artery to the promontory of the sacrum; (3) isolation of the superior hypogastric plexus and resection of as much of it as possible; (4) isolation of the right lumbar sympathetic chain which is usually situated just at the lateral border of the inferior vena cava and resection of at least two of the lumbar sympathetic ganglia (usually the third and fourth); (5) isolation of the left lumbar sympathetic chain which in the majority of cases can be found just beneath the left border of the abdominal aorta and resection of at least two of the lower lumbar sympathetic ganglia; and (6) closure of the peritoneum by a continuous suture of fine catgut.

THOMAS J. MOSES, MD

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Davis, M., and Walker, E. W. Modern Laboratory Methods for the Early Diagnosis of Pregnancy
New England J. Med., 1932, CCVI, 173

Of the modern laboratory methods for the early diagnosis of pregnancy, the authors regard the Friedman modification of the Aschheim-Zondek test as the most reliable. They state that the technique using the rabbit is the most delicate, the simplest, and the easiest to read. It is of advantage also because the rabbits may be used again, the test being thereby rendered less expensive.

A. H. GLADDEN, JR., M.D.

Sorrentino, B. Velamentous Insertion of the Umbilical Cord, with Special Reference to Its Occurrence in Placenta Prævia (La inserzione velamentosa del cordone ombelicale considerata specialmente in rapporto alla previetà placentare)
Arch. di ostet. e ginec., 1932, XXXV, 1

Of 100 cases of placenta prævia studied by the author, velamentous insertion of the umbilical cord was found in about one-fourth. Sorrentino believes that placenta prævia and velamentous insertion of the umbilical cord are both due to metritis, and that metritis may be of importance also in the causation of placenta marginata and supernumerary placenta, which are often associated with velamentous insertion of the cord.

EUGENE T. LEDDY, M.D.

Gurov, A. J., and Colillas, D. Placenta Accreta (Placenta accreta) *Bol. Soc. de obst. y ginec. de Buenos Aires*, 1931, V, 451

The processes of placental loosening are well known and explain quite well the variations in resistance to loosening of the uteroplacental connections that are observed from case to case.

Exaggerated physiological adherence is frequently noted in manual delivery of the placenta, but often can be overcome easily if a good plane of cleavage is found. In the exceptional case, as in the case reported in this article, there is no such cleavage plane, a true adherence of the placenta to the uterine wall in the form of placenta accreta being present. In the literature the authors were able to find only 30 cases of the latter type.

In the authors' case, as in the majority of the cases reported in the literature, the adherence of the placenta was neither total nor uniform. Histological examination revealed a hypoplasia which was more or less accentuated in the basal decidua. In some sections there was almost complete disappearance of that layer.

The villous penetrations vary from simple contact to deep penetration. Some observers use this

characteristic as a means of distinguishing different degrees of placenta accreta. The uterine muscle fibers in contact with and in the vicinity of the placental villi undergo a certain degree of hyaline degeneration, and almost always the placental villi are separated from the hyalinized muscle fibers by a thin layer of fibrin. The fibrous layer is believed to be due to the histolytic action of the fetal elements on the uterine muscle.

The normal placenta loosens itself easily because at the end of delivery the basal mucosa undergoes a process of degeneration. As the result of this degeneration the basal muscular layer becomes loosened with little difficulty. However, in the absence of the mucosal layer separation is impossible.

The first explanations of true adherence were based on the theory that the villi undergo degeneration and a neoplastic layer is formed. Mauriceau regarded the phenomenon as a shattering of the placenta. Auvard and Robin explained the process on the basis of placental congestion with exudation and hemorrhage and subsequent organization of the clot. Up to the end of the nineteenth century the theory most generally accepted ascribed the condition to inflammation. Brachet believed the origin to be placental, whereas Simpson, Hegar, and others believed it to be endometrial. The theory attributing the condition to inflammation is not supported by the histopathological findings as the latter show hypoplasia or absence of the basal decidua. The villous penetration may be due to the absence of uterine decidua with a consequent decrease in resistance to penetration of the villi or to exaggeration of the power of penetration possessed by the villi. It is known that the maternal tissues defend themselves by an antitryptic ferment and by a barrier of tissues which thicken quickly and maintain the attachment of the fetal elements, that the only maternal tissue physiologically prepared for the attack of the fetal elements is the mucosa of the uterus. If the uterine decidua is hypoplastic, the placenta will be insufficient and its function diminished and limited.

After reviewing the many theories advanced to explain placenta accreta, the authors state that up to the present time no satisfactory explanation of this condition has been found.

If not the most grave of the many complications of pregnancy, placenta accreta may be included among those with the most unfavorable prognosis. Of the cases reported in the literature, those which were successfully treated were cases in which an error was made in the diagnosis and those in which other complications necessitated cesarean section and thus led to hysterectomy before the placenta was loosened.

the intestine is packed upward toward the diaphragm and the posterior peritoneal peritoneum is closed just above the promontory of the sacrum. The nerve filaments which constitute the superior hypogastric plexus lie immediately beneath the peritoneum and anterior to the mid-sacral artery. After all of the filaments have been isolated a segment at least 1 cm long is resected from each main nerve fiber to prevent regeneration. The posterior peritoneum is then closed by a continuous suture of fine catgut and any necessary supplementary operations are done.

In periartrial sympathectomy of the internal iliac artery the posterior peritoneal peritoneum is incised just above the artery and the posterior iliac vessels are removed. After completion of dissection of the artery the peritoneum is closed with fine catgut.

The step of the complete pelvic sympathectomy performed for the relief of pain due to operable

neoplasms of the pelvis are as follows: (1) incision of the posterior peritoneal peritoneum just over the lower portion of the abdominal aorta; (2) removal of all of the sympathetic nerves of the pre-aortic plexus from the origin of the inferior mesenteric artery to the promontory of the sacrum; (3) isolation of the superior hypogastric plexus and excision of as much of it as possible; (4) isolation of the right lumbar sympathetic chain which usually is tied just at the lateral border of the inferior vena cava and resection of at least two of the lumbar sympathetic ganglia; (5) division of the third and fourth of the left lumbar sympathetic chain which the majority of cases can be divided just beneath the left border of the abdominal aorta and excision of at least two of the lumbar sympathetic ganglia; and (6) ligation of the posterior mesenteric artery with fine catgut.

THORPE J. M. M.D.

He divides the leukæmias into the acute and chronic types. In ten cases of acute leukæmia there were nine maternal deaths during pregnancy or delivery or shortly after delivery. One child was born at full term and survived and one child was born prematurely. In one case the pregnancy was interrupted by cesarean section, and in two cases by therapeutic abortion. In all of the cases in which the pregnancy was interrupted the mother died.

The author believes that in cases of acute leukæmia interruption of the pregnancy should not be attempted as it is of no benefit. It should be done only at the end of pregnancy to save the child.

Sixteen of the cases reviewed were cases of chronic leukæmia of the myeloid type. In chronic leukæmia of the lymphoid type pregnancy does not occur because the lymphocytes infiltrate the uterine mucosa changing the morphological structure of the endometrium completely, and the ovarian parenchyma disappears.

In cases of myeloid leukæmia no changes of the genital organs were found on microscopic examination.

The author suggests the following rules for the management of chronic leukæmia complicating pregnancy.

- 1 If the leukæmia has existed a few years or the patient has passed through other pregnancies during the existence of the disease, the leukæmia should be considered a vital indication for interruption of the pregnancy in the interests of the mother. The interruption of the pregnancy should be done preferably during the first two months.

- 2 The interruption of the pregnancy should be followed as soon as possible by sterilization with the X rays.

ISAAC ANDRUSSIER, M D

Ingraham, C B. Therapeutic Abortion in Pulmonary Tuberculosis. *Am J Obst & Gynec* 1932, xxii, 1.

In the selection of cases of pulmonary tuberculosis in which pregnancy is to be terminated the patient must be studied individually. As it is impossible to foretell the result, some authorities believe that, to be on the safe side, the uterus should be emptied in every case, but in the author's opinion this policy would frequently result in unnecessary sacrifice of the infant.

Ingraham believes that any woman with active pulmonary tuberculosis or in whom pulmonary tuberculosis has been but recently arrested will run a great risk if she becomes pregnant as the combination of pregnancy, labor, and the puerperium may prove fatal.

In twenty-three of the cases reviewed in this article a curettement, about the simplest procedure possible, was done. The results in three cases are unknown. Fourteen (70 per cent) of the patients were benefited, four (20 per cent) of them were not benefited, and two (10 per cent) died. The next best results were obtained with the use of the dilating bag, which was followed by improvement in

two cases (66.6 per cent) and death in one case (33.3 per cent). Vaginal hysterotomy, splitting of the cervix with removal of the fetus and placenta, which was done in two cases was followed by improvement in one case and no improvement in the other. Of four cases in which abdominal hysterotomy was done, it was followed by no improvement in one case (25 per cent) and death in three cases (75 per cent). There is no doubt that the more serious operations with shock, loss of blood, and a stormy convalescence are to be avoided if possible. In six cases in which resection of the fundus was done to combine sterilization with therapeutic abortion, improvement resulted in five (83.3 per cent) and death in one (16.6 per cent).

In nine cases the abortion was effected under nitrous oxide anæsthesia, in five, under chloroform anæsthesia, in four, under ether anæsthesia, in one, under ethylene anæsthesia, and in nineteen under spinal anæsthesia. The author prefers spinal anæsthesia.

In eleven patients the pulmonary lesion was slight, in seven, moderately advanced, and in sixteen advanced. In five the symptoms were severe at the time of the operation and death resulted. The effect of pregnancy on the patient with active pulmonary tuberculosis is generally so unfavorable that the pregnancy should be interrupted while there is still a chance for improvement. E L CORNELL, M D

LABOR AND ITS COMPLICATIONS

Kehrer, E. What Are the Signs of Threatening Spontaneous Rupture of the Uterus? (Welches sind die Zeichen der drohenden spontanen Uterusruptur?) *Ztschr f arztl Fortbild*, 1931, xxviii, 698.

Kehrer distinguishes between rupture from distention and rupture due to damage of the uterine wall. Rupture due to distention is evidenced nearly always by a longitudinal tear in the lateral portions of the overdistended parts of the isthmus and cervix.

In order to distinguish between the distended and contracted portions of the uterus (the so-called Bandl's contraction ring) three rules must be observed. Narcotics must be withheld because they relieve the restlessness of the parturient woman as well as the pain felt in the overdistended portion of the uterus and the round ligaments, thereby masking the symptoms of the impending catastrophe. The urinary bladder must be emptied, and intestinal gases must be removed by inserting a rectal tube. The warning symptoms of rupture are an increase in the pulse rate, a mild temperature elevation, and occasional slight vaginal hæmorrhages.

Typical uterine rupture due to damage to the uterine wall depends upon a decrease in the resistance of the myometrium and a gap in the musculature at the site of a previous puerperal metritis dissecans. There are no painful contractions or signs of uterine distention. Mild pain in the lower abdomen is the only warning signal. It is of prime

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FRANCIS M. CONWAY M.D.

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employed more generally in the treatment of grave pathological conditions complicating pregnancy.

The advisability of cesarean section for placenta prævia, ablatio placente, and preconvulsive toxæmia can be determined only by comparing the results of this treatment with those of other methods. The mature trained judgment of the expert obstetrician is necessary for the decision.

The authors believe that in cases with potential infection the low or cervical operation should be done, and that in cases with definite sepsis the Porro operation should be considered.

In the discussion, PHANEUF reported a maternal mortality of 2.5 per cent in 238 cases in which cesarean section was performed. He believes that the indication for which the operation is done is of chief importance in determining its mortality.

MATHIEU reported that of 19,500 births occurring in Portland, Oregon, cesarean section was done in

217 (1.12 per cent). One hundred and ten of the operations were performed by obstetricians and 117 by general practitioners. The maternal mortality was 4.6 per cent and the fetal mortality 10.1 per cent. Of 14 cases of eclampsia, cesarean section was done by general practitioners in 11 with a maternal mortality of 30 per cent.

JACKSON reported that of 2,538 deliveries in private practice cesarean section was done in 258 (10 per cent). The mortality in the total number of cases was 0.7 per cent and the mortality in the cases of cesarean section 2.3 per cent.

MCCORD reported that during the five year period from 1925 to 1930, 220 abdominal cesarean sections were done in 7 hospitals in Atlanta, Georgia, with a mortality of 5.5 per cent. The cause of death was general peritonitis in 8 cases, metastatic complications in 2, ether pneumonia in 1, and pulmonary œdema in 1.

E. L. CORNELL, M. D.

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la and passes downward over the pelvis and the ureter with definite slowing at the pelvi-ureteral junction. Numerous experiments to determine the effect of interruption of this peristalsis failed to cause even the earliest degree of hydronephrosis.

Hydronephrosis is divided into the renal, pelvi renal, and pelvic types. The renal type is usually due to calculus disease, and the pelvi renal type to definite obstruction below the ureteropelvic junction. The cause of the pelvic type is obscure.

Among the causes to which idiopathic hydronephrosis has been attributed are ureteral stricture, abnormal mobility of the kidney, aberrant renal vessels, and folds and valves at the pelvi-ureteral junction. These are not constant findings and are to be considered secondary rather than primary.

Pelvic hydronephrosis has been produced in rabbits by simultaneous ligation of the ureter and posterior division of the renal artery.

A ring muscle or sphincter has been demonstrated at the pelvi ureteral junction. Hypertrophy of this bundle is not found, and simple spasm is not likely to cause dilatation of the pelvis.

Congenital deficiency of the musculature of the pelvis may be a cause of pelvic hydronephrosis, but this has not been proved.

Pelvic hydronephrosis in which no primary obstruction is apparent is best explained by achalasia or lack of relaxation with secondary infection and an associated disturbance of the neuromuscular mechanism.

ANDREW McNALLY, M D

Lewis, B. Regurgitation Renal Colic. A Clinical Entity. *J Am M Ass*, 1932, LVIII, 609.

It was formerly believed that the normal ureteral valve prevented the regurgitation of urine from the bladder to the ureter. Experiments on animals seemed to confirm this belief. In experiments on animals carried out in 1898 Young was unable to effect regurgitation by various degrees of pressure on filled bladders. The results of investigations by Sampson and by Stoeckel were also negative. However, clinical observations and more recent investigations have proved the old theory incorrect. Graves and Davidoff found that even under very low pressure the slow filling of the bladder of healthy dogs, cats, and rabbits was followed by regurgitation with surprising frequency. In rabbits, the incidence of regurgitation was as high as 80 per cent. It was found also that the backward leaking was most apt to occur in the strongest bladders having the greatest tonicity, and that in bladders with less tonicity the valve was most likely to be competent and resisting. Of 1,036 cystograms studied by Bumpus, regurgitation into one or both ureters was found in 89. In some of the cases the regurgitation was due to back-pressure and in some to incompetent valve action.

Therefore it now seems to be well established that under proper conditions of tonicity and pressure on the filled or semi-filled bladder urine or fluid regurgitates through the normal and intact orifice



Cystogram showing bilateral regurgitation in a case with prostatic obstruction and chronic right renal pain. Relief was afforded by prostatectomy.

back into the ureter and even up to the renal pelvis. Experiments by Gruber showed apparently that the intravesical ureter serves as a passive true valve and not as a sphincter.

The main deduction made from these observations was that they explained the frequency of ascending infection from the bladder to the kidney. That urinary regurgitation might be the cause of renal colic was first suggested by the author in 1924. Lewis believes that regurgitation through the intact ureteral orifice is responsible for many intense renal colics associated with prostatic and urethral obstruction. He reports nine cases of renal colic ascribed to regurgitation.

In a discussion of regurgitation and regurgitation colic before the French Society of Urology in 1930 the speakers used the terms "active reflux" and "passive reflux" to distinguish between regurgitation under pressure and regurgitation through the golf-hole orifice.

In conclusion the author says that intravenous urography will probably be of aid in the study of renal colic caused by regurgitation.

ELMER HESS, M D

GENITO-URINARY SURGERY

ADRENAL KIDNEY AND URETER

M s at J L Th R u l C r e u l t i o n A C o n
s t r i b u t i o n I t s S t r u c t u r e C o r t i c a l Z
(C l o s e r l C t b u d n s t d
l t l) R e r d p l d d A m d
g t 93 4 33

I b u t u d f t h r e n a l c u l t o n t h e a u t h r
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c o n s i s t s i n l i g a t i n g t h e n l n t i n g f o r t h
v e s s e l t b c o m n g s t e d b y t h e f l o f a t a l
b o d a n d t h e n l i g a t i n g t h e l a t e y n d r e
m v g t h k i d n e y f r s t u d y T h a d n t a g f
t h i s p r e d u c a t h t i t c a b e c r i d o u t t h e
l g a n m a l a n d d o s o t q t h e e o f a n y
f g s b t a n c e

I s o m c a t h e p d a s a p p l i e d t o o l y
n k i d y I n o t h e r t w s a p p l i e d t o t h e
k i d n e y f e e t e r l o f t h r r f u m u t h a
n d n s t i l l o t h t s s p p l m t e d b y l u g e
t c h n q

T h a f f r n t g l m r i r b r n h h a l l o f t h e
c h a t e t i c s o f a n r t e s l e a d p s u t s a t r u
p h n e r a t t h e p o n t w h e r t e n t r t h g l o m u
T h e f f e n t b n h s s m a l l t h n t h e a f f t
b r c h a n d t w l l s i f m e d b y a n d o t h e l a l
m m b a w h i c h r e t s p o a m s h f t
t e l l y a p p l i d t t h e t b u l e T h f l e n t b
a n c h s u b d r e d e s a f m s c o m p l e p e t b u l r
p l e u o f c a p l l a r s f d f e e t c l b T h c a p l
l r s d r i n t o v e s r u n n g p a l l w t h t h
i n t l b u l a r r t e c b u t d f m d o c t

T h t y p o f c i c l a t o n t h g a l z e f t h
p l l r s a n d t h e c l o e r e l a t f t h e d o t h l l
l m g o f t h c p l l a e s t t h t b l a p t h l m
s g g e s t t h n u s d s o f t h l i n t h r r t o
s h p t t h t a b e c u l e f f e m k A l s r
n a l o g y t s t h e p l n

W H M E M D

S c o E T h y f e n a l R f l x (S l f
) A h i d f 93 357

T h e a u t h t u d i e d t h f t n a l e l t n h p
b e t w e t h r n r y b l d r a n d t h e k i d n y
s r e f e p m e t d o g s H e n t d t h i m l o
s t m l t f t h b l d d e t a t d t p t
a p e s s r f y m f w t e o e t p r d d
n n r a s m t h e o f t h e k d e y s d e t m a d
w t h t h o n c o m t a d i e n t h e t i
f r S t m l o f g t r t s t y h a
v e a l p e s s e y c m o f w i r f r i c
t u m l i o n o f t h b l d d e r p d d r e
t h u t p t o f u m a d t h e u e f t h e k d

T h e a t a t o n m t h s z o f t h e k d y a d t h
e c r u o f d e p c p l y t t h t m l
f o m s y m p t h t e n e r v e f i b e r s t h t u t n t h e

i f e r o r m e s t i c g a g l o I f c t s t i m u l a t o
o f t h g a n g l i o n p r o d u c e t h e s a m e r e f l e p h s o m n
s a r e o b a i n e d b y t m u l a t n o f t h b l d d e
S t i m u l a n o f t h b l a d d e r i t e r t p t n o f t h
i n f e r r e s e n t e r c g n g l o n p d c e t h e l d a y
o t a n t r e f l e x p h m n a w h u h d v e l p m e
s l w i y a n d a r e l s s i t n s e

T h e p o s s i b i l i t y t h a t t h v e c u l a r s y s t m m i g h t b e
a f c t o r i t h l o s e f u c t i o n a l l a t n s h i p b
t t h b l d d r a d t h k i d n e y s r u l d t b y
t h r p d t y o f t h e r p o n e t t h s t m i t o d
b y t h f a c t t h r o l m a r d c o t n t a
t i n s r n t d n t h b l o d p e e T h u t s l
p s s g e s a e h k e w i s e e x c l d d a p a t h o t h e t s
m i s s f t h i m p u l s i n c n a l l o f t h p e
m e t t h e t i r e t e d P a n i p r o b b y
n o t f a t b s e t h e e n d e s c a l p s r e l y
l i g h t l y g r e a t t h a t h p e s r r q d f
m c t u r t n

T h e a t h r b l e t h a t t h c l o s e f u r t o n l a d
n a t o m i c a l l a t i o n h p b t w e t h b l d d r a d
k i d n e y s f i n d l c a l a p p l i c a t i o n t h n t p t
t i f t p h o m a s h a t h p l y t h t
a c m p e s a n d f o l l w s a c t v e a l d s t n t
a d p b l y t h c u o f c e t a t y p f a u
f n r o u g P z A R M D

H f d J P S o m F t s i n t h C a t l f
l t y d o n p h o s L t 93 435

T h c u s o f h y d o p h s s d u i d e d a t o
t h e c n g n t l a n d t h c q u e d
T h t m o n g n t l h y d p h s p p l
a b l n l y t c a s e n b h h d n e p h u s i f d
t h w b n n f t o d c r e d s o f t e b t h
C a s f e g e n t l h y d n p h r s m a b e d v i d
t t t h e f l l n g t w o g o u p s

T h o s w t h b s t u r d t o l n h
s t r e t e w i n g f l d

T h f m g a l r r r n d h y d p h r s
w h i c h o t y p f m c h a n i c a l o b t t i
d m s t b l f h d f i c i e d l p m n t
i t h m s c l a t u r f t h u t m v b e p a b l
f r t h e r d t

C f a q d h y d p h m a y b d d d
i t h f l o w g t g p
C s s t h a d m t b l m a r p b
t t o f r m c a l l p m t u b
f l a m m t t h t a e t a l t t e o
r t r i k k c a s d b y b t s l o b m a t
m b l i t y f t h k d y T h f t f d d o u
p l e t e o b t t t p m r y t o p h v I m t
c e s o f u h b t u t o a h y d p h t c s c d
l p l t h g o t t t h s a m d g e c n
p l t p a t l o h t t
C s e w t h f t i l b a t i P e r t l
b g t h m j a l t h e t p o f t h p p l

plished under the influence of the autonomic nervous system which, while adjusting the relaxation, also reinforces the contraction of the sphincter which depends on a parasympathetic reflex. When a pressure of 18 cm of water is reached, rhythmical contractions begin and during these contractions the pressure is raised. Afferent impulses through the sacral autonomic (parasympathetic) fibers reach and pass upward through the central nervous system to the brain, where they result in a consciousness of bladder fullness and a desire to micturate. In adults, this is under the control of the higher centers, whereas in babies the rise in pressure initiates a parasympathetic reflex which relaxes the internal sphincter and increases the contraction of the detrusor muscle.

Voluntary micturition can be performed perfectly even when no sensation of fullness is present. Increased intra-abdominal pressure is not essential. All that is necessary is the proper environmental setting and a mental action which we call volitional.

Under normal conditions all micturition in man is voluntary after the age of two or three years, the lower centers then never acting automatically. Recognition of this fact may help to an understanding of the vagaries of bladder disorders.

Voluntary cessation of micturition is a willed action which is probably effected through the external sphincter.

Micturition is affected by disease and injury of the spinal cord and the sacral nerves. In severe injury of the spinal cord the bladder is paralyzed and retention with overflow incontinence results. After a varying period the tone of the bladder is gradually recovered. After a further period there is some reflex relaxation of the sphincter and reflex urination gradually increases.

According to the theory of automaticity, closure of the internal sphincter is possible in the absence of nervous control from the spinal cord and there is an intrinsic mechanism which can relax the sphincter when the bladder is sufficiently distended. The inherent tendency is believed to depend upon a parasympathetic reflex. If this assumption is correct the reflex must be entirely outside of the central nervous system.

The same disease involving the same site will vary in its effects upon the bladder in different cases according to its severity. When there is any connection between the sacral center and the higher parts of the nervous system the micturition reflex will be inhibited and controlled. This fact constitutes the chief difference between disorders of micturition in spinal disease and in completely destructive traumatic lesions of the spine.

The efferent and afferent pathways of bladder control and sensation are not known. In disease of the spinal cord in which the crossed pyramidal tracts are affected voluntary control over micturition is also frequently disturbed. The earliest symptoms are defective power of initiating voluntary micturition and of inhibiting reflex micturition.

If the sensory ascending paths in the cord are damaged, appreciation of bladder fullness is imperfect or absent. Reflex micturition is likely to occur with brief or no warning and without any consciousness of the act.

When the sacral segments, the site of an important co-ordinating center, are diseased, retention of urine commonly results. In some cases micturition is possible, but is weak in force or jerky.

Paralytic incontinence may occur, but is comparatively unusual.

When the sensory or motor connections between the bladder and the sacral cord are damaged, the remaining fibers prevent the establishment of automatic bladder function. Although some sensation is retained when only the sympathetic vesical nerve supply remains there is no doubt that bladder sensation is conducted mainly by the parasympathetics.

In cases of tumor of the cauda equina in which the conus is not involved, bladder disturbances are often absent. When present, they develop late. When the conus is involved bladder symptoms appear early or suddenly during the course of the disease.

LEARMONTH stated that the greatest number of sympathetic fibers reach the bladder through the presacral nerve which is situated in front of the bifurcation of the aorta beneath the peritoneum. This nerve has two lateral roots and one medial root. It may be made up of a comparatively solid strand or a loose network. At the level of the first piece of the sacrum it divides into the two hypogastric nerves which join the hypogastric ganglia. Parasympathetic fibers also join these ganglia. The extrinsic nerves to the bladder leave the ganglia in five or six strands which supply not only the bladder but also the ureters, prostate gland, seminal vesicles and posterior urethra.

Learmonth's discussion of the functional aspects of the innervation of the bladder may be summarized briefly as follows:

1. Presence of inhibitory fibers. Learmonth has been unable to demonstrate definite dilatation of the bladder on faradic stimulation of its sympathetic nerves. He states that the most convincing evidence regarding the presence of inhibitory fibers has been clinical.

2. The presence of pain fibers. The presence of pain fibers was demonstrated at operation by the fact that when the presacral nerve was grasped with forceps a "crushing pain in the bladder" resulted.

3. The presence of motor fibers to the internal sphincter. Learmonth has shown that, in man, faradic stimulation of the presacral nerve produces strong contraction of the bladder.

4. Motor nerves to the muscle at the ureterovesical orifice. Stimulation of the presacral nerve causes contraction of both ureterovesical orifices to pinpoint size. As there is no special sphincter there the effects may be attributed to the response of the trigone.

5. Motor fibers to the trigonal muscle. Stimulation of the presacral nerve causes contraction of the

It is indicated for patients who cannot bear the expense of long medical treatment. If the testicles are not involved epididymectomy is the procedure of choice. In cases with infection and fistula formation and in those with involvement of a testicle unilateral castration should be done. In doubtful cases a free exploratory orchidotomy is indicated. In bilateral genital tuberculosis in young men mutilating operations should be avoided. Spontaneous recovery is frequent.

AUDREY GOSS MORGAN, M D

Hvams, J A, Kramer, S E, and McCarthy, J F
The Seminal Vesicles and Ejaculatory Ducts
J Am M Ass, 1932, xcvi, 691

The authors' studies show that the ejaculatory ducts are always involved in posterior urethritis. As a rule the inflammation is mild and juxta-urethral. Under such circumstances chronic infiltrative changes of the terminal portion of the ducts occur in only a relatively small percentage of the cases. When infection of the adnexa becomes more widespread and chronic, catarrhal inflammation of the ejaculatory ducts and seminal vesicles occur in conjunction with diffuse follicular prostatitis. Frequently chronic inflammatory changes of the wall of the juxta-urethral portion of the ejaculatory ducts, associated with productive inflammation of the verumontanum, occurs eventually. The tendency toward such involvement diminishes as the vesicles are approached.

The seminal vesicles usually show superficial inflammatory changes of a chronic type with little infiltration of the walls. Chronic vesicular infiltration is not uncommon, but marked inflammatory response in the vesicular walls and the perivesicular tissues does not occur with ordinary chronic vesiculitis. Marked involvement results only when there is an overwhelming regional inflammation of the destructive suppurative type.

Clinical experience indicates that the spread of the infection from the posterior urethra occurs by mucosal continuity and lymphatic invasion. Active infection and inflammation of the lymphatics and draining hypogastric and external iliac glands may result in acute lymphangitis and regional lymphadenitis with or without local inflammatory infiltration of the affected region. With subsidence of the focal infection the lymphangitis becomes less marked although the lymph nodes remain enlarged for some time. In numerous autopsy specimens the authors found frank cicatricial posterior urethritis and chronic quiescent prostatitis with or without inflammation of the ejaculatory ducts and vesicles, in which the regional lymph nodes were enlarged but perivesicular fibrosis was absent. This observation does not preclude the possibility of previous temporary infiltration and inflammatory thickening of the periprostatic and perivesicular regions with complete or almost complete absorption of exudate and a return to normal with minimal postinflammatory fibrosis.

On the other hand, marked destructive suppurative involvement of the prostate and vesicles causes an exudative response of the entire region and when there is marked suppurative destruction of tissue reparative processes should result in fibrosis of the vesicles and perivesicular regions. Even under such conditions absorption of much of the inflammatory mass occurs. These facts may explain why autopsy studies fail to reveal vesiculitis and perivesiculitis with the frequency that would be expected from clinical impressions.

LOUIS NEUWELT, M D

Wangensteen, O H. The Surgery of the Undescended Testis. *Surg, Gynec & Obst*, 1932, lv, 219

The author discusses the structural and physiological condition of the undescended testis, the physiology of the normal descent of the testis into the scrotum, and the likelihood of malignant degeneration in the abnormally situated testis. He then describes his technique for orchidopexy and reports the results obtained in a series of 30 cases of undescended testis which he treated surgically.

He states that the fear of failure of development of spermatic function in the testis placed in the scrotum artificially has kept many surgeons from attempting orchidopexy. It is usual for the interstitial cells which are involved in the development of secondary sex characteristics in the male to remain active in the undescended testis but in older men there is failure of spermatogenesis in the undescended testis, probably because of atrophy of the cells of Sertoli. Moore has thrown considerable light on this problem by demonstrating that the scrotum is a thermoregulating mechanism. In the abdomen the testis becomes aspermatic, but when the organ is placed in the scrotum spermatogenesis recurs.

Histological examination shows that up to the time of puberty there is little, if any, difference, between the undescended and the normally descended testis. However, the undescended testis is much more likely to undergo malignant changes than the testis in the scrotum, and scrotal fixation of the organ does not appear to lessen the increased likelihood of malignancy. Hunter claimed that the undescended testis is imperfect and that this accounts for its failure to descend into the scrotum. The same opinion is held by Bland-Sutton. Heredity is perhaps a factor.

Orchidopexy has been described many times, there being about 100 names associated with the various operative procedures suggested to bring the undescended testis into the scrotum. Whatever the plan of operation, the testis will develop normally if it placed in the scrotum before puberty. Bevan has urged that operation be done early as it may be performed on infants with little hazard and there is no reason to expect descent to occur spontaneously before puberty. In adults with atrophic undescended testes there is no hope of improvement from anchoring the testes in the scrotum. The size of the testis is a fair criterion of how the organ will react in the

trigonal area of the bladder. After sympathetic neurectomy the trigon at least in the male becomes flaccid at once.

6 Behavior of the internal sphincter after sympathetic neurectomy. In patients with a normally innervated bladder the internal sphincter is at first dilated but in the course of two or three weeks recovers sufficient tone to allow normal micturition.

7 Effects on micturition of division of the sympathetic nerves to the bladder. Frequency is not uncommon for a few days after the operation but at the end of that time micturition is normal in every way.

8 Effects on micturition in the female of dividing the pudic nerves. There is no interference with micturition after division of the pudic nerves.

In the case of the female division of the pudic nerves has been followed by normal pelvic and labor. Occasionally it is immediately followed by menstruation. After the operation on male there is no difficulty in the performance of the sexual act and a psychical orgasm is experienced but ejaculation does not occur.

BARRI CRONGA, a summary of conclusions from perimetry regarding the nervous mechanism of micturition in the cat. *Am. J. Anat.* 1933.

McCaughan, J. M., Mayo, R. G., and Baasch, W. F. The value of the RSG cystometer in the diagnosis of neurogenic affections of the urinary bladder in man. *J. Urol.* 1933.

The RSG cystometer has been used in the Section of Urology of the Mayo Clinic in October 1929. Eighty cases in which cystometograms were made have been analyzed. In a suspected case of a lesion of the nerves of the bladder. In seventy-two of the cases the patient was subjected to a cystometric examination and cystometry and neurological examination were carried out. An attempt was made to determine the relationship between the information yielded by the cystometer and that obtained by cystoscopy and the relationship of the procedure in the diagnosis of lesions of the bladder. It is pointed out that the number of cases reported is too small to warrant final conclusions but the results seem to demonstrate the value and the limitations of cystometry as a routine procedure. *Chin. J. Med.*

In forty-four (6 per cent) of the seventy-two cases there was agreement between the findings of the two methods and in twenty-eight (39 per cent) there was disagreement.

The data show that the diagnosis of neurological bladder disturbances was made more often by means of the cystoscope than by means of the cystometer (54 per cent of the cases sagrest 49 per cent) and that the diagnosis of neurological disturbances of the bladder was made oftener by the use of the cystometer than by the use of the cystoscope (43 per cent of the cases sagrest 33 per cent). On

the other hand fewer cases were classified as indeterminate with the use of the cystometer than with the use of the cystoscope (8 per cent sagrest 10 per cent). The analysis demonstrates that the cystoscopy method of diagnosis is significantly more in the cystometric method. The cystoscopy method is almost entirely by the use of the cystometric method is partly by the use of and partly by the use of.

Of the forty-one cases in which a neurological examination as made the results were positive in thirty-two and negative in fourteen.

In the group of thirty-two cases in which the neurological examination was positive there were twenty-four showing agreement and eight showing disagreement between the findings of the cystoscopy and the cystometric methods.

Of the group of five cases in which the neurological examination was negative eight showed agreement and showed disagreement between the cystoscopy and cystometric findings.

Of the total number of forty-six cases in which neurological examination was made the data of the neurological examination agreed with the data of the cystometric examination 77 per cent and with the data of the cystoscopy examination 77 per cent.

The correlation of the results of the two methods of the cystoscopy and the cystometric method and the neurological method is to be considered. The agreement of 77 per cent is the first direct proof for the diagnosis of the neurological cystitis and cystometric examination is a certain determinant of the factor.

In conclusion the authors state that cystometry is only of positive value without the cystoscopy. The cystoscopy is of definite value in the diagnosis of the cystitis and cystometric examination is of doubtful value.

GENITAL ORGANS

Parvulus G. and Vasc. botle. H. Ge. 11
Tab. ulost. in Young M. n. (La. 1. b. 1.)
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The report of the cases of genital tuberculosis in young men. Operation was performed in twelve cases. Good results were obtained in two-thirds of the cases. Pathological changes of the testes were not observed.

Genital tuberculosis is a disease of the testes very rapidly progressing and it is less likely to be cured than in the case of the testes. The disease is a part of the pathology of the testes.

The treatment depends on the lesions of the testes. The conservative treatment is the first choice. The surgical treatment is the second choice. The treatment of the testes is the first choice. The treatment of the testes is the first choice.

surgical exposure Of 25 patients subjected to the radical operation by Hinman, 3 died later of metastases, 1 was killed in an accident, and 16 survived

A study of the results of the various procedures shows that even with a mortality of 10 per cent, the radical operation is the operation of choice

Barringer and Dean have reported cases treated by high-voltage X-ray irradiation directed to the loin and low-voltage X-ray irradiation directed to the scrotum followed by orchidectomy and post-operative irradiation continued for three or four months However, the length of time since the treatment was given and the number of cases studied have not been sufficient to prove the value of this procedure

The author's conclusions are summarized as follows

1 Practically all neoplasms of the testicle are malignant The malignant embryomata are somewhat more malignant than the spheroidal-celled carcinomata

2 Sarcoma is among the rarest of testicular neoplasms

3 The route of metastasis is usually lymphatic

4 Simple castration is of little avail, effecting a cure lasting from four to six years in only about 5 per cent of the cases

5 Radical operation seems to give a considerably higher percentage of cures despite its high primary mortality

6 Before the radical operation is decided upon, the testicle should be studied in the operating room grossly and microscopically by both the surgeon and the pathologist

7 Pre-operative and postoperative irradiation in conjunction with careful castration may prove to be the procedure of choice, but the number of cases in which this treatment has been used is still too small to warrant definite conclusions

ELMER HESS, M D

MISCELLANEOUS

Stevens, W E Differential Diagnosis of Pathological Conditions of the Urinary Tract and the Female Genitalia *J Urol*, 1932, XXII, 103

In a review of the case records of 913 patients examined at the Women's Clinic of the Stanford University School of Medicine, the author found that 25 per cent of the patients coming for treatment of gynecological diseases, exclusive of gonorrhœal urethritis, presented urinary symptoms due to the gynecological disease, and that 22 per cent of those coming for treatment of a urological condition had gynecological symptoms or disease He calls attention to the frequent similarity of symptoms associated with gynecological and urinary disease and the frequency of associated gynecological and urological lesions He discusses the uterus and ovaries from the standpoint of urology, and the urinary tract, ectopic kidney, and renal calculi from the standpoint of gynecology He believes that injuries of the bladder and ureters during gynecological operations are more common than is generally admitted In conclusion he emphasizes that a thorough examination of the urethra should be made in all cases of gynecological conditions, and that adnexal disease should be thoroughly eradicated in the treatment of urinary lesions DONALD K HIBBS, M D

no mal environment. Therefore if trophy b not b me ev dent orchdoxy may have good results. Bevan emph sizes th t eparati n of the vaginal proce s from the oth r elements of the spe mat c cord comb ned w th removal f the co r ngs of the cord w ll s mobilise the test s that in most ca es it can be pla ed i the ser tum with ease. However the test s no tran pla ted w ll retract and w ll not l e at the bott m of the rotum.

To ove ome the tend y to et act the a thor u s a modification of the T k meth d. In h s p edure the usual disse tion of the t t is done any h n a p sent is repair d nd 4 suture of No oo ch om gut are pl ced in th tu ca. Ibu gin a the ends b ng cut long so that y may be used as tractors to p ll the test s do n th gh th t nica vaginal s communis. Th post o po tion of the scrotal i cis n hav g been sutured to the kt f the postero half of th th gh i c s n the t t is brought down and faste d to the s d of the adj c t th h b ancho ng the uteres t th thigh fascia. The remaind of th scr tal thigh acision is then cl d the scr tum and test s be ng left anchored on the th gh. In th s po t on th re is no ch e for the testis to b com r tr cted up into the upp r po t n of the sc tum. A p ece of vas lined g uze is pla ed under th scrotum nd be tw en it and th thigh. The f t unde the tal skin i not di sect d way t nt ns me of the nutr ent ss ls of the sk n and f it is r moved the heal ng of the sc tum i the th gh will not b s cure. For a w ek after the ope t n th att chme t of th cr tum and te tus to the th gh i p o tected by keep ng the leg in acute flexion. While the att h ment m y be left pe ntly it s perhaps better for the sake of cleant nes to d tach the n on aft r f ur m ths. Th testis will th n rema perma ne tly in the low scr tal pos t n.

Of the 3 cases f undescended testis p at d upon by th a tho e us n of the test s s d in ca e because the pati t dema d t and in 2 ca s because at phy w far adv nc d as to mak proper identification f th te ticular t u s e impossible. In only ca s w s the vas too hort to permit pr per pla ement of th testis in th scrotum. Of the o ca s p er ted upo by the techniq e descr bed a good result was obt ed n almo t all. CLA DE D H LKES MD

Sin ons f Malign nt Neopl sms f th Testicl
Am J S g 93 xv 6

Mal gnant tum rs f th te ticle e ra e F w surge ns have seen m re than a f w case. Acco d ing to Che as u the majority of te ticular tum rs a degenerated embry mat th so called m xed or terato d tumors seminomata sol d tum rs d rived f m the ep thel um f the sem nif o stubul s.

Ew g in 19 cla fied them s adult embryomata or terat mata embryo i terat d o m ed tu z and embry nal mal gna t tumors.

In the opinion of H ma nd oth rs the m noma of Che as u s n t d t nct f om mal gna t

embryoma b t a terato d tumor in whu h th re is a one sided cellula dev l oment resulting in a bom i g us celled tumor with lymphoid st oma.

E ing b lieve that seminomata ar o e ded developm nts f teratomat. He bases his opina on the fact that in on instance the b ghly p culia tructu e actly dupliated th t of the tumors n h ch t id rmal lements w r demo strat d in se al sect ns f tum rs that e app e ly semin mata. Dew faul d find elements f m o m re ge m layers. S hultz and Eisend the gr w th Che s u as t th natu of semu mata.

Dew clas fies m mat as sphe o dal cell d carc nomata. Schultz a d E sendrath g a ery c mplete cl sificati n of t t u ar tumors. I Hunnan clas fication ca cinoma is the sem oma f Che as u and the sph ro dal-cell c rc ma f Dew.

Er m th h t l g c l t ndp i th typ s of m l gna t tumor h ch cl d ne ly all of th t t cul carc n mata a e the sphero dal-cell d carc nomata of th h mol gois tumor and th m l g nt mb y m ta f the h te olog t m.

The ca ci om ta res mbl the gra ul mat s type of test cula syphilis whil th embryomata e h st log call heterol g us mix d tumors.

Th auth eves s 3 cas s of sph o dal c ll i ca t oma 3 of m l gna t emb yoma and i tumors f yph lit c ign wh ch w seen at th Syd ham Hospital New Yo k.

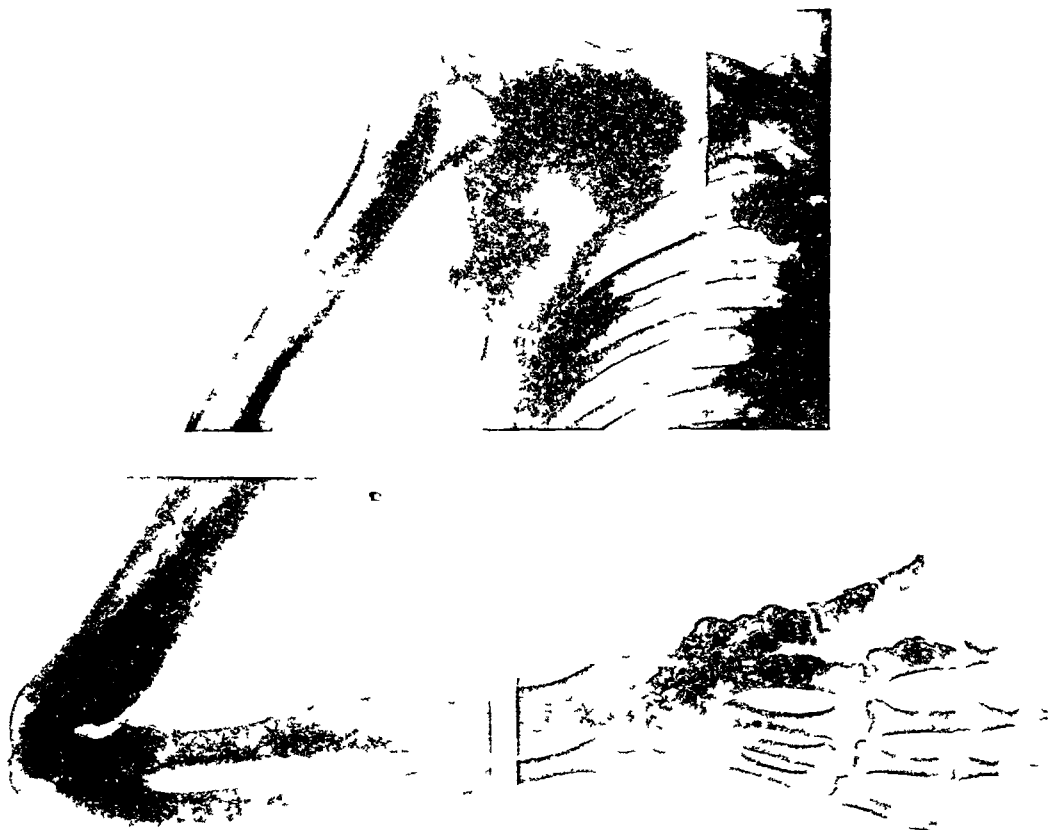
N plasms of the te ticle pro ra e nearly l w y t m ly mal gnant b t ar rare.

The p ration f castrati n of lttle val and th r d cal p at n is very difficult. O chud ct my s easy t p rfo m d has n mmed t m tal ty b t ts sult re t good. Of 3 p t ts s b je ted t o h d ctomy by Kobe ny we e i aft r three ve f oo hje t d to this op atio by Che as u ly 9 were ali e aft r from f ur t t yes s d f 600 who wer tr ed by T n er afte orch d ct my nly 55 per cent w al aft f vea. Dew obt nd cu in nly of 37 cases a d H ma 3 cu es n 18 c s n hich ch d t my as d n.

M t s m m ta meta ta iz by a lymphatic te th y are den ed fr m th epit h ium. A rule they n tasta iz i the d p lymph tics the e s du ct ct o bet een th testi i and th l mnh gla ds f the g n. Th gl ds usually in led the p m rv lumba odes.

Th ad l op to ons t of em al of th t st cl a d th deep l mb lyw n. It s forard ble pr edu n al ng dss t f th gl nd f m the g n f the bdomin l a rta.

Ca ns repo ted 7 cas n wh ch th dical ope t o w performed w thout any p m ary m rial tv. I 93 H ma p ted 79 ca e wh h b h d primary m tal ty f 3 per cent. Dew perf rm d the adical per ti s e with no d ths. He say th t the p ocedu s j ufed n ba ly 60 p ce t f th ca. In c e d by H man the c d t on f d t be n pe bl lt.



Composite roentgenogram of shoulder girdle and roentgenograms of upper extremity in author's case. The hyperostosis extends from the first rib in a continuous flow to the phalanges.

bony masses in the soft parts of the shoulder or hip.

As the disease advances, pathological products are deposited in periarticular areas occasionally causing complete fixation of a joint. The unaffected parts of bones adjacent to, or opposite, hyperostosis frequently show decalcification and rarefaction. The occurrence of pathological fractures in melorheostosis has never been reported. Transitory oedema, congestion of the veins, and neuralgia may result when the masses become large enough to cause pressure on the nerves and blood vessels.

The condition has been ascribed to vasomotor neurosis, infection, endocrine constitutional disturbance, and embryonic defects.

It usually progresses very slowly and may remain stationary for years. The prognosis is favorable. No evidence of malignancy has been noted. These facts should be considered before radical therapy is attempted.

No definite therapeutic achievements have been reported. Because of the meagerness of the symp-

toms the patients frequently hesitate to submit to treatment. Surgical correction is rarely indicated. In one case improvement was noted after repeated roentgenograms were taken in one session. However it must be borne in mind that spontaneous remission of symptoms is a characteristic feature of the disease. The author believes that the systematic application of irradiation therapy might result in a better knowledge of the biology of the abnormal cells and the pathogenesis of the condition.

H. EARLE CONWELL, M.D.

Key: J. A. Hemophilic Arthritis. *Ann. Surg.*, 1932, vol. 198.

The author gives a short historical account of hemophilic arthritis and then describes the pathological changes in the soft tissues, the cartilage, and the bone.

The joints of the hemophilic are at first normal. As the result of some injury, or even without any known injury, bleeding occurs into a joint. This may begin early in life. The joint becomes dis-

SURGERY OF THE BONES JOINTS MUSCLES TENDONS

CONDITIONS OF THE BONES JOINTS MUSCLES TENDONS ETC

F b i M Th P th g n i f G t g u i
Impe f ta (S H p t g d h t g m
p f t t) C t f f 93 v i t g m

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D s o m a s R d l g y 93 3 4

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K r a f t E M i h e o t f L e f f i m M t 93
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r r e s p n d t t h u f l a p e r n p h f
n r v e

S o m e b r v h e d m b e d d n s e b a c t h u
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t h a t h b l t h t t h u s t m e l y f
h y p o t t c r i d g e s a t h u r f f t h c o t
A t h e h r a t n s t f t t h c u e f

Forestier has treated over 100 patients, but this report is based on the cases of only 48. He states that the results of the treatment cannot be judged until after a period of two years, during which time the effects have been thoroughly checked. The action of the gold-salt treatment does not become apparent very quickly on clinical examination. At least two or three months must elapse before definite changes in the condition are observed.

Of the 48 cases reviewed very good results were obtained in 17. The patients were rendered clinically free from symptoms and in cases of short duration every sign of progress of the disease disappeared. Very good and good results were obtained in 23 (70 per cent) of the cases. In the remainder, partial results were obtained in 10 and negative results in 5.

The treatment is indicated in all cases of rheumatoid arthritis or infective peri-arthritis as long as the disease is progressing. The cases which respond best are those with a leucocytosis, a high resorcin flocculation test and an accelerated sedimentation rate.

PHILIP LEWIS, M.D.

Mair, W. F. *Myositis Ossificans Progressiva*
Edinburgh W. J., 1932, **XXXI**, 13, 69.

Mair reviews the history, pathology and etiology of myositis ossificans progressiva and reports two cases of the condition.

Myositis ossificans progressiva is a disease of the locomotor system occurring in the growth period of children. Mair states that it would be more correct to call the condition "fibrositis ossificans progressiva" as it is characterized by the appearance of masses of bone or areas of calcification in the fascia between the muscles instead of within the muscles.

The disease is quite rare. In the English literature Mair has been able to find a record of only twenty-five cases although it occurs more frequently in the Anglo-Saxon race than in other races. It is more common in males than in females. Mair believes that it may be present at birth, and reports a case in support of this theory. In another case it was noted two weeks after birth. It begins most frequently in the first two years of life.

Mair discusses the relation of heredity, infection and trauma to the condition. The lesion may occur in the region of any striated muscle. It often begins in the region of the cervical spine. In 75 per cent of cases Helferich found one or more congenital deformities. Most common were deformities of the fingers or toes.

As a rule there are swellings throughout the body. These vary from soft, fluctuating cyst-like tumors to densely hard swellings. As a rule they become smaller and harder and in a few days change into bony lumps which may be felt beneath the skin. The entire process appears to be almost painless.

In discussing the pathological anatomy, the author states that bone-like masses of varying size attached to the bony skeleton of the body and masses or plates of bone without any skeletal at-

tachment have been found. When fully formed, this bone seems to be of the nature of true bone.

The prognosis of the condition is always grave. The children rarely reach adult life. Frequently they succumb to an intercurrent infection, particularly tuberculosis. In some cases however distinct improvement is noted although no forms of treatment yet devised appear to arrest the progress of the disease. Attempts at surgical interference are inadvisable as they seem to stimulate renewed activity of the bone formation. In the author's opinion, dietetic and medicinal measures and physical therapy are of no value.

Almost all that can be hoped for is the prevention of trauma to the child who will subsequently develop the disease, and recognition of the nature of the early lesions in order that surgical measures may be avoided.

PAUL C. COLONNA, M.D.

Rocher and Cretin. *Progressive Ossifying Myositis. A Clinical and Histochemical Study* (*Myosite progressive ossifiante. Etude clinique et histochimique*). *Rev. d'orthop.*, 1931, **XXXVIII**, 790.

The case reported was that of a female child four and a half years old. The symptoms were first noted by the mother when the child was eleven months old. They consisted of stiffness of the neck and slight torticollis. When the child was first seen by the authors in July, 1920, examination revealed a forward position of the chin due to flexion deformity of the cervical spine, right-sided torticollis, pronounced stiffness of the neck, and sharp limitation of rotation of the head. Roentgenograms disclosed no congenital deformity.

In October, an attempt was made to correct the deformity by manipulation under anesthesia but was unsuccessful. A plaster collar was then applied with slight correction for about two months. In January, 1930, swelling appeared and hard masses could be felt in the supraspinatus region. The condition gradually extended to the muscles in the right side of the back and the gluteal region. Movement in the right shoulder and hip were limited and lateral flexion of the lumbar spine was completely blocked. The pectorals on the right side became involved, and a few months later the induration and hard plaques under the skin could be felt in the abdominal muscles and most of the musculature of the right side of the trunk, both front and back. The skin was hard, dry, and shiny, suggesting ichthyosis. In May, and again in October, 1930, some of the larger osseous deposits were removed from the dorsal and pectoral regions to give more freedom of motion, but the ossification quickly recurred. Chest movements became impossible and breathing was abdominal. In January, 1931, the lower third of the scapula was resected and better motion was obtained in this region. When the child was last examined in September, 1931, she was in good general health. The movement of the jaws was sharply limited and the right elbow could not be extended beyond 90 degrees. Although the neck

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joint affections, syphilis must not be left out of consideration in the diagnosis of disease of the large joints. Next to the Wassermann test, the roentgenogram is of importance as a diagnostic aid, but in the interpretation of the roentgen findings other clinical signs and the history must be considered.

The author reports a case of syphilitic disease with a negative Wassermann reaction. Tuberculosis and rheumatism were ruled out by the long course of the condition, the patient's good general condition, the insignificance of the local findings, and the absence of fever and rheumatic symptoms. There was no indication of any other type of infection and no history of trauma. The roentgenogram, showing chiefly proliferative changes, suggested syphilis. This condition was apparently of a synovial type as the articular cartilage had been completely destroyed (an advanced stage of reactive proliferation). The treatment included a course of mercurialunctions, the administration of potassium iodide, iontophoresis in the vicinity of the diseased joint 6 times, and the administration of 3 drops of *stilingia silvatica* 3 times daily for a prolonged period.

The hip joint is one of the most frequent sites of the monarticular complications of syphilis. Together with the elbow joint, it is attacked next most often to the knee joint. The mildest form of syphilitic involvement of the hip is coxalgia beginning with transient rheumatoid pains which usually attack other joints also. There is no effusion. Coxalgia develops during the secondary stage of syphilis with or before the exanthem. In simple hydrops there is a slowly developing, usually painless joint effusion occurring as a rule in the hip joint alone. Under the influence of specific therapy the exudate is usually resorbed rapidly without leaving any permanent changes. This also is a complication of secondary syphilis. In syphilitic pseudorheumatism several other joints are usually attacked at the same time as the hip joint. Rheumatoid pains occur in the hip joint, especially at night. The temperature rises moderately and the joints become swollen. Recently, syphilitic polyarthritis with a high fever, stormy attacks of pain, and marked attacks of perspiration have been reported.

Gummatous coxitis is a primary synovial disease which begins with papillary and gummatous infiltrations of the synovial membrane and may lead to the new formation and proliferation of the synovial villi. Proliferation into, and complete destruction of the articular cartilage result. The head of the femur or the bony edge of the acetabulum may be deformed and show osteophytic deposits based on reactive proliferations which appear like stalactite formations on the large joints. This complication occurs in the tertiary stage of syphilis. Occasionally there is also an effusion. The disease begins slowly and runs a chronic course without fever and with only moderate pain. Limitation of motion occurs only in the late stage with the formation of osteophytes. There is no pain on palpation and no increase of pain on motion. In contrast to the

doughy soft consistency of articular tuberculosis cartilage-hard thickened masses of synovial membrane are found at the site of reflection of the capsule.

The so-called bony or epiphyseal forms of syphilis of the hip joint, which usually take their origin from a gumma of the head of the femur lying near the epiphyseal cartilage, do not belong to the true joint affections, but lead to them clinically. The gumma first breaks down the surrounding bone and then provides a stimulus to ossification. The articular cartilage may also be destroyed. A communication between the epiphysis and joint and an effusion may result. In some cases there are marginal proliferations similar to those of true primary synovial syphilis of the joint.

Healing of gummatous disease of the head of the femur is brought about by an ossifying osteitis. An osteosclerosis and sometimes an eburnation results.

In the roentgenogram the gumma appears as a light spot surrounded by shadows due to hyperostosis. In contrast to tuberculosis, the condition is characterized by absence of atrophy of the adjacent portions of bone and periostitis of the diaphyses of the tubular bones which, especially in the tibia, is a typical sign of syphilis. If the picture of tuberculosis with extensive destruction of bone, diffuse demineralization, and bone atrophy without new bone formation is borne in mind, the fundamental roentgen differences between the 2 conditions will be recognized.

The clinical differential diagnosis from other types of coxitis is based on the pain which increases at night, but is not aggravated by motion, the slow afebrile course of the condition, and the absence of atrophy of the musculature of the leg. As it is difficult to differentiate the bony and synovial forms clinically, these may be grouped together clinically as chronic deforming monarticular coxitis. In contrast to the strictly monarticular chronic deforming coxitis, there has recently been described a chronic deforming polyarthritis which often runs also a stormy acute course. In such cases the diagnosis is based on the findings of roentgen-ray examination, the good general condition, the Wassermann reaction of the joint punctate, and the results of specific therapy.

Finally, there remains to be mentioned the tabetic arthropathy in which there is an enormous effusion without pain and with flattening of the acetabulum and subluxation. Purulent coxitis can never result from syphilis alone. Its development requires a mixed infection brought about by a direct external injury with dissemination of an infection from contiguous tissues or, in septic pyæmic conditions, by way of the blood stream. ERICH HEMPEL (Z)

Mazzacava, G. Subcalcanal Exostoses (Sulle esostosi sottocalcanari). *Chir. d. organi d. n. o. m. e.*, 1931, xvi, 557.

The author discusses the etiology and treatment of subcalcanal exostoses and reports six cases.

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The method described is of value in cases of low fractures which have consolidated in poor position, but in cases of high fractures astragalectomy is the procedure of choice. Astragalectomy is sometimes very difficult. Occasionally the author has been obliged to chisel the bone out bit by bit. Whatever the method used, metallic foreign bodies are useless and may be harmful.

In the discussion of this report, BARBARIN said that whatever the method of reduction used and whether the fracture is fresh or old, the foot should be put in a position of complete varus. If this is not done, the reduction is not complete.

AUDREY GOSS MORGAN, M D

Massart, R. **Malunited Dupuytren Fractures** (A propos des fractures de Dupuytren vicieusement consolidees.) *Bull et mem Soc d chirurgiens de Par*, 1931, **xxiii**, 662

Malunion of Dupuytren's fracture is common. The foot is left in valgus and equinus and walking is difficult and painful. As a rule the patients do not come to the surgeon until after five or six months, when osteosynthesis is useless, the ends of the bones have become friable, and many adhesions have formed. The author advocates osteosynthesis for fresh fractures, but not for old ones. In cases of old fractures resection of the astragalus with restoration of the axis of the fibula is the operation of choice. Restoration of the axis of the fibula corrects the valgus. The axis of the foot can generally be corrected manually.

The author prefers a dorsal median incision for astragalectomy. This incision gives access to the middle of the joint, reveals the bone changes more plainly, and facilitates the removal of the adherent parts. Astragalectomy without drainage and with plaster immobilization in a moderate varus position makes it possible for the patient to walk after about three or four months.

AUDREY GOSS MORGAN, M D

Leo. **Malunited Dupuytren Fractures** (A propos des fractures de Dupuytren vicieusement consolidees.) *Bull et mem Soc d chirurgiens de Par*, 1931, **xxiii**, 664

For malunited Dupuytren fractures the author suggests the technique used by Destot, who refractures the bone by cutting the callus, which is generally spongy and non-resistant, with an Ollier tendon cutter. When this method is used there is no effusion of blood such as occurred in the original fracture and the foot can be brought into a forced varus position. Destot advises the surgeon to grasp the foot with both hands and lean on it with his chest so as to add his weight to the muscle force of his forearms in pushing the foot into the varus position. When the varus is accomplished there is a loud crack in the bimalleolar region. A plaster cast (Maissoneuve trough) is then applied. The plaster is separated from the thin dressings over the skin sutures by an impermeable tissue such as steri-

lized paper. This is removed after two or three days as soon as the plaster is dry.

The author has used Destot's method in two cases with excellent functional results.

AUDREY GOSS MORGAN, M D

Judet, H. **The Treatment of Malunion of Bimalleolar Fractures** (Traitement des consolidations vicieuses des fractures bimalleolaires) *Bull et mem Soc d chirurgiens de Par* 1931, **xxiii**, 664

The treatment of malunion of bimalleolar fractures must be surgical. The nature of the operative procedure varies with the nature of the fracture. Bimalleolar fracture is sometimes called "low Dupuytren fracture."

Judet refractures by osteotomy of both malleoli and then twists the foot strongly into a varus position. The subluxation of the astragalus is thus reduced and the valgus of the foot disappears. If the osteotomy of the fibula has been properly done the two fragments have a large contact surface and there is no need of osteosynthesis to keep them together. The internal malleolus is pushed back into normal position by the astragalus and cannot slip as long as the foot is in varus position. Nailing it to the tibia is not necessary. As the internal malleolus is always hypertrophied, part of it should be resected. When the resection is subperiosteal, the attachments of the internal lateral ligament are preserved and the stability of the astragalus is not affected. The operation is completed by suturing the two malleolar incisions. A plaster cast is then applied to immobilize the foot in a strong varus position.

Complete consolidation occurs in from thirty to forty days. At the end of that time the patient can walk with a Delbet apparatus for thirty or forty days.

The results in three cases operated upon by the technique described have been good. In one the ankle joint is stiff, but in two, function is entirely normal.

The author reports a case of malunion of a typical Dupuytren fracture in which it was necessary, not only to perform an astragalectomy but also to resect the lower end of the tibia in order to bring the foot into line with the axis of the leg. The operation was performed about five months after the accident.

In cases of more recent fracture, astragalectomy alone is usually sufficient. If the fracture is not more than a month or two old it is generally possible to preserve the astragalus and replace it in its proper position. The author emphasizes the importance of preserving the external malleolus in all cases. Destot has shown that in the absence of the external malleolus the balance of the foot is irremediably destroyed, the astragalus seesaws outward, an irreducible valgus is established, and walking is impossible on account of the unsatisfactory position of the foot and the pain it causes.

AUDREY GOSS MORGAN, M D

Calcaneal spurs are discovered most frequently in persons between the ages of fifteen and fifty years. Mazzacua has found their incidence to be between 3 and 4 per cent. This considerably lower than the incidence reported in the literature. Mazzacua believes also that calcaneal spurs are more common in males than in females.

Three of the six patients with these cases are reported gave a history of gonorrhea; infection. While the fact seems to support the more common view as to the source of pyogenic infection, Mazzacua's of the opinion that such osteosarcomas are not due to a specific cause. He attributes them to (1) general constitutional changes (2) traumatic processes (Brislet) (3) mucous bursitis of the calcaneal tendinous structures and (4) ossification of the aponeurotic tendinous structures about the calcals in cases of flat foot.

He believes that calcaneal spurs are flat feet of the form of the calcaneum formed by the contraction of the tendons of the muscles of the foot caused by the displaced longitudinal arch of the foot. It is situated in the plantar surface. A large number of calcaneal osteosarcomas observed in patients are located in the medial undersurface of the calcaneus because of the great reaction to which the medial gait is exposed.

The treatment advocated radical removal of the spurs by horseshoe or peritrochanteral incision followed by rest in bed for three days.

S. L. Gove M.D.

FRACTURES AND DISLOCATIONS

Wheeler H. Dislocation of the Trapezoid Bone.
(Lancet) 1933 p. 466

While dislocations of the proximal base of the radius are common, dislocation of the distal base is rarely seen. The distal base is a particularly strong point of attachment of the ligaments of the wrist. The dislocation of the distal base of the radius is a rare condition. The author reports a case of dislocation of the distal base of the radius, which was treated by open reduction and fixation with a Kirschner wire.

The author reports the case of a patient with a dislocation of the distal base of the radius, which was treated by open reduction and fixation with a Kirschner wire. The patient was a young man who had been playing football when he was injured.

The author reports the case of a patient with a dislocation of the distal base of the radius, which was treated by open reduction and fixation with a Kirschner wire. The patient was a young man who had been playing football when he was injured. The dislocation was discovered on X-ray examination. The patient was treated by open reduction and fixation with a Kirschner wire. The patient was discharged on the fifth day and was able to return to his normal activities.

bone had been squashed completely flat. The process of the trapezoid bone had been pressed in the palmar direction and after the pressure had ceased it had moved forward of the magnum. The enlargement of the joint spaces as explained by the laceration of the ligaments.

Attempts to open the epistaxis by the use of the forceps failed. The epistaxis was caused by the pressure of the trapezoid bone on the flexor surface and the plate of the metacarpal bone.

Three months later the patient was able to walk without the aid of crutches. The patient was able to walk without the aid of crutches. The patient was able to walk without the aid of crutches. The patient was able to walk without the aid of crutches.

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SURGERY OF THE BLOOD AND LYMPH SYSTEMS

BLOOD VESSELS

Beneke, R. *Anatomical Results of Reflex Vascular Spasms* (Anatomische Folgen reflektorischer Angio spasmen) *Muenchen med Wchnschr*, 1931, 11, 1773, 1831, 1869, 1902

The author discusses the importance of vascular spasms in the development of disease from the point of view of a pathological anatomist. In the first place, he recognizes the possibility of pathological organic changes from vascular spasms, as exemplified by acute areas of necrosis in hearts with normal coronary vessels (in epileptics) and in skeletal muscle after constriction with an Esmarch bandage for even half an hour. The occurrence of vascular spasms in the peripheral parts of the body, which is acknowledged to take place in Raynaud's disease, leads to a search for analogous conditions involving the internal organs from traumatic or psychic injuries acting by way of the sympathetic nervous system. Along this line of thought the author discusses the pancreas, stomach and duodenum, liver, spleen, kidneys, sex glands, and brain.

Acute pancreatitis, which is usually attributed to autodigestion resulting from abnormal activation of pancreatic ferments by intestinal juices entering the main excretory duct, may be explained also by a spastic condition of the pancreatic arteries. In animal experiments the author was able to produce small areas of autogenous digestion simply by pinching the pancreas with the fingers for twenty minutes. Simultaneous spasms of the bile ducts, which are so often diseased with the pancreas, are to be considered as predisposing factors in the production of pancreatitis. Reflexes originating from the bile ducts may extend to the coeliac ganglion and from there to the arteries of the pancreas. Contusions of the abdomen, appendicitis, and operations in the neighborhood of the porta hepatis, after which the author has observed pancreatic necrosis, are also predisposing factors. The simultaneous development of areas of autodigestion throughout the entire pancreas and the rapid extension of these areas beyond their original boundaries suggest a sudden overwhelming cause rather than the retention of secretions in the pancreatic duct.

According to the author the development of so called hæmorrhagic erosions of the stomach and duodenum is to be explained on a similar basis as it has been demonstrated that in the first stage they consist in minute purely ischæmic necroses of mucosa, so called "stigmata." Such changes may occur in the newborn from the trauma of birth, but their incidence is decreasing as the result of progress in obstetrics which has lessened the frequency of birth injuries. In adults such stigmata are seen after

abdominal operations, their incidence being proportional to the trauma caused by the surgeon. It is now generally recognized that the lesions can develop into gastric ulcers. In the author's opinion the fact that such erosions are not confined to Aschoff's Magenstrasse but are found more often in the fundus of the stomach and in the duodenum suggests an angiospastic origin.

Not without some hesitation, Beneke includes acute yellow atrophy of the liver among the diseases produced by arterial ischæmia. His reason is that he believes this disease develops from trauma. Acute intestinal catarrh may have a similar origin. Beneke cites a case in a child one and a half years old.

Ischæmic foci are frequently seen in the spleen but because of the abundant collateral circulation in this organ necrosis usually does not occur.

In the adrenals the formation of diffuse hæmatomata, which not infrequently is the sole cause of death of newborn infants, may also have its origin in a vascular spasm. The spasm occurs first and after its subsidence the organs are flooded with blood which breaks through the delicate vessel walls.

In the kidneys, certain types of anæmic infarction may be explained on the basis of vascular spasms when the main afferent vessel is found free of thrombosis. The clots discovered in the arteries and veins of necrotic areas in such cases may be regarded as the result rather than the cause, of the necrosis.

The results of vascular spasms in the ovaries are quite uncertain, but in the testicle the acute necrosis which has been attributed heretofore to torsion of the spermatic cord or compression of the internal spermatic artery and the testicular hæmorrhages frequently occurring in the newborn may sometimes be explained on the basis of vascular spasm. The same cause may be responsible for anæmic infarcts of the placenta.

It seems probable that vascular spasms and their injurious effects may occur also in the central nervous system. To such an origin may be ascribed necrosis of the hippocampus in epileptics and similar lesions following powerful psychic stimuli. The lesions vary in size from the most minute punctiform necroses to disintegrations of an entire half of the brain. This theory leads to a new conception of the influence of psychic trauma in the production of foci of necrosis in the brain.

The evidence shows that malignant tumors can develop at the site of necrotic foci because of the abundant supply of nutritive material.

In conclusion the author points out that foci of necrosis in the hypophysis, which lead to Simmond's or Froehlich's disease, can be explained fully as well by vascular spasms as by problematical toxins after such conditions as grippé.

MIL BUDGE (Z)

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SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE, POSTOPERATIVE TREATMENT

Kaufmann, R., and Galea, M. Postoperative Tetanus (Du tetanos post-opératoire) *J de chir*, 1952, LVII, 195

By the term "postoperative tetanus" the authors mean tetanus following an aseptic operation in an untraumatized field. The condition is rare, occurring after only 1 of 40,000 operations.

The bacillus responsible for the condition may be present in the patient's skin, glands, or digestive tract at the time the operation is performed or may be introduced by the surgeon's hands or the catgut.

Operations on the gastro-intestinal tract are frequently performed in the presence of the tetanus bacillus. This bacillus may be found in from 5 to 40 per cent of individuals, depending on circumstances of time, place, and race.

Matas has reported 2 fatal cases of postoperative tetanus. In one, the condition followed a perineorrhaphy, and in the other it developed after a hemorrhoidectomy. Matas ascribed the infection to the eating of raw fruit a few days before the operation. The authors regard this explanation as unacceptable. Four other fatal cases are reported in the literature. In 1, the condition followed appendectomy and in 3 an intestinal resection.

In experiments on 23 guinea pigs in which the authors fed tetanus spores before and after gastro-intestinal operations, postoperative tetanus developed only once, and in this instance accidental contamination of the wound seemed probable.

Catgut as a source of tetanus infection has been studied by elaborate inoculation and cultural experiments. In the literature the authors were unable to find any convincing cases in which tetanus could be traced to the catgut employed.

Samples of intestinal mucosa collected from several catgut-manufacturing plants which were allowed to putrify and concentrate by evaporation and then heated to 70 degrees for thirty minutes failed to cause tetanus in rabbits. Controls showed that the heating was insufficient to kill the spores. Therefore the theory that sheep's intestines are necessarily contaminated with the tetanus bacillus appears to be incorrect.

When catgut purposely contaminated with tetanus spores was treated with Lugol's solution for from five to fifteen minutes, cultures and inoculations were uniformly positive, but when it was placed in Lugol's solution for one hour at 37 degrees it was sterilized. Tincture of iodine sterilized strands of medium size in ten minutes.

In most cases of postoperative tetanus the infection seems to have come from the patient's skin.

The author's experiments indicate that the usual surgical preparation is entirely inadequate to kill the spores of tetanus. This is true particularly in regions where the skin is thick and irregular. A 1:1,000 solution of iodine in pure benzene is believed to be the most effective solution.

ALBERT F. DEGROAT, M.D.

ANTISEPTIC SURGERY, TREATMENT OF WOUNDS AND INFECTIONS

Giaccia, S. Gibbus Resulting from Tetanus (Gibbus da tetano) *Chir d'organi di movimento*, 1931 LXI, 531

In a review of the literature the author was able to find only eighteen cases of gibbus resulting from tetanus. To these he adds two which came under his personal observation.

His first case was that of a man thirty-four years of age. Two years after this patient was serologically cured of tetanus he re-appeared at the clinic complaining of a deformity of the spine, progressive muscular flaccidity of the posterior thoracic group of muscles, constant pain in the interscapular region, and respiratory embarrassment. Roentgen examination was negative. The gibbus, which was attributed to the tetanus, was relieved by combined physiotherapy and orthostatic measures.

The second case was that of a boy fifteen years of age who was treated for tetanus by the intraspinal administration of 185,000 units of anti-tetanus serum. When all of the acute symptoms had subsided a dorsal gibbus was evident in the region of the fourth, fifth, and sixth thoracic vertebrae and there was intractable pain in the region of the deformity. Roentgen examination of the spine revealed a compression fracture of the fourth, fifth, and sixth thoracic vertebrae. Hibbs' operation was done and the chest immobilized in a cast.

Giaccia next discusses the mechanism of production of this unusual deformity. He believes that in his first case the gibbus was provoked primarily by muscular spasm with adaptive shortening during the course of the disease and was favored later by the progressive flaccidity of the thoracic muscles. The compression fractures of the vertebral bodies in the second case he attributes to severe tonic contraction of the muscles of the thoracic region during the convulsive seizures of the tetanus.

S. L. GOVERNALE, M.D.

Kline, B. S., and Maschke, A. S. Three Fatal Cases of Bacillus Pyocyaneus Infection *J Am Ass*, 1932, XLVIII, 528

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meninges and nerve centers at the time of the puncture. These factors explain better than any others the rarity of the complication following spinal anesthesia.

The authors believe that their theory is supported also by the fact that similar paralyses are known to occur following simple spinal puncture: the injection of distilled water, and re-injection of the patient's own spinal fluid, and by the experimental work of Weed, Aver and others which showed that spinal puncture after the intravenous injection of microorganisms caused a fatal septic meningitis.

HALE A. HAVEN, M.D.

SURGICAL INSTRUMENTS AND APPARATUS

Storp, W. Thilo Huehne. *New Ways Toward an Improved Catgut* (Thilo Huehne, *Neue Wege zu einem besseren Catgut*). *Zentralbl. f. Chir.*, 1931, p. 2866.

Huehne's method of producing better catgut is new and not a variant of known procedures. Tissue irritation is prevented by the use of a disinfecting but non irritating, dye mixture (malachite green and methyl violet). As the use of these dyes alone is not safe enough, Huehne uses catgut sterilized previously with iodine, from which the iodine has been removed. This so called blue catgut is non-irritating, but is not especially durable as it swells in the tissues and permits absorption of the dye so that organisms may invade the strand during its absorption.

The new procedure consists in changing the blue catgut into blue oil catgut. Huehne renders sterile blue catgut impermeable to water by a hardening process which is not described in detail (formalin in alcoholic solution?) and treating its surface with an unnamed drying oil (linseed oil, poppy oil, fish liver oil?). By hardening, he breaks down the peripheral protein layers of the strand and makes them difficult to absorb. The oil dries in the air to linoxyn. The surface of the strand becomes covered by a thin

layer of fibrin and the individual fibers perhaps become covered with linoxyn. Tissue fluids are therefore able to reach the catgut fibers only after destruction of its linoxyn covering. It is very probable that such catgut swells with difficulty and remains intact in the tissues for a long time, that it does not irritate, that the disinfecting agent does not soak out during the period of absorption, that early invasion of the catgut by organisms from the wound is impossible and that the catgut is durable.

From the excellent results obtained with the blue-oil catgut at the Leipzig Surgical Clinic it must be assumed that superficial sterility of the strand is also attained. The author states that iodized catgut made for the war originally had an iodine content of from 12 to 17 per cent, but when it was taken from storage in 1925 and 1926 it often contained but a third and rarely more than a half of its original iodine. Free iodine the disinfecting component, disappears almost entirely.

Tests of tensile strength revealed that 0.6 per cent iodine-alcohol acting for five days on raw iodized catgut reduced the strength of heavy catgut (0.6 mm) from 8 to 7 kgm, reduced that of medium catgut (0.45 mm) from 5 to 4.5 kgm, and reduced that of fine catgut (0.3 mm) from 3 to 2.7 kgm. When the iodized catgut strands are dry, the destructive process is considerably slower and the catgut remains useful for several years. Storp believes that hydrolysis is the essential factor in the absorption of catgut, but Huehne does not agree. Under the influence of ferments the catgut protein, an amino-acid complex, is split at its CO-NH bonds by deposition of water. In this manner are formed protein particles which gradually become so small that ultimately they are soluble in the tissue fluids. Because of its content of free iodine and hydriodic acid, iodized catgut must irritate before hydrolysis occurs. The irritation results in an accumulation of serum as a defense mechanism, which Huehne correctly considers a disadvantage of the use of iodized catgut.

L. LUTZ (Z)

The author believes that the point from which the disease is disseminated is often the tonsillar bed rather than the tonsil itself. He bases this conclusion on the findings obtained with the modified dissection method together with the Christeller large excision procedure in which the tonsil, tonsillar bed, and pharyngeal space with the venous drainage area are removed *en masse*. As a rule, there was a phlegmonous process which involved the veins secondarily. In no case was it possible to demonstrate a direct primary septic thrombophlebitis of the tonsillar veins such as was described by Fraenkel. The paravascular spread of the phlegmon took place sometimes by continuity and sometimes without continuity. In the former case the interposition of a bland stagnation thrombus led to spontaneous healing. The same mode of spread of the infection is to be seen in cases of dental sepsis and in sepsis following phlegmon of the floor of the mouth and parotitis.

The regional lymph nodes become diseased in all cases. The author's findings indicated that the primary lymphogenous lymphangitic origin of general infection described by Uffenorde is very rare. Pulmonary abscesses develop in the great majority of cases. Other metastases to organs are found in the form of nephritis, osteomyelitis, prostatitis, and endocarditis. Direct propagation in the form of a burrowing phlegmon leads to mediastinitis. In some cases meningo-encephalitis occurs.

LUDWIG JAFFE (H)

Nathan, H. The Route of Spread of Septic Metastasizing Infections (Ueber den Ausbreitungsweg septischer, metastasierender Infektionen). *Arch f. path. Anat.*, 1931, cclxxxi, 430.

Basing his investigations on the Schottmueller theory of sepsis, the author has succeeded in obtaining some very valuable new information. He studied the route of dissemination of septic metastasizing infections in a large amount of autopsy material.

In this report, he compares the term "sepsis of a particular circulatory system" with the term "sepsis of the general circulatory system." He states that an essential part of the Schottmueller theory is the postulate of participation of the blood vessels in sepsis. The occurrence of a metastasizing sepsis cannot be explained merely by the assumption that a constant inundation of the entire body occurs from a primary focus, the bacteria passing through the lungs which act as filters between the lesser and greater circulations. In cases of sepsis with the primary focus in the territory of the lesser circulation there must be a thrombophlebitis of the pulmonary veins before the sepsis can metastasize by way of the greater circulation. Exceptions are, of course, cases of patent foramen ovale and endocarditis. Evidence supporting this theory was found in practically all of the cases studied.

The thrombophlebitis, which usually develops in the region of a pulmonary abscess is often difficult to find, but is seldom absent. Exceptions are cases

in which bacteria circulate in the blood for a long time without causing local symptoms or remain latent in organs for a considerable period and then produce metastatic foci in the territory of the larger circulation without the intervention of pulmonary thrombophlebitis. In this way paraneuritic abscesses develop from a renal focus and osteomyelitis occurs after furuncles and carbuncles.

If all cases of sepsis, even those without the formation of metastases, were studied with regard to participation of the blood vessels in the spread of the condition, it would be found that four circulatory systems play a role as "close dentities." They are (1) the lesser circulatory system, (2) the greater circulatory system, (3) the portal circulatory system, and (4) the lymphatic circulatory system. In infants there is, in addition, the fetal circulatory system. The symptoms vary according to whether the infectious process lies in the territory of one or another of these circulations. However, the disease processes cannot be considered from only the morphological standpoint as pathophysiological processes also play a role in their development. In the initiation and direction of the organic resistance the reticulo endothelial system is of great importance. In the sensitizing processes this system comes to the aid of the connective tissue of the blood vessels. The latter factor seems to be of particular importance especially in the liver, and perhaps also in the spleen.

Every metastasis may lead to the formation of a new septic foci. In this way secondary and tertiary septic foci may be formed.

The histological picture of the venous changes is described, and the value of Friedemann's topodiagnosis is emphasized. Of special importance in the diagnosis and prognosis is a bacteriological examination of the arterial blood.

While a dissemination of bacteria is found in the venous blood, the arterial blood may remain free. In such cases coming to autopsy the bacteriological topodiagnosis agreed with the autopsy findings.

The treatment recommended is surgical attack on the septic foci when this is possible.

ARTHUR STAFF (Z)

Gaspar, I., Fenstermacher, W. A., and Lingeman, L. R. Systemic Blastomycosis, with the Report of a Fatal Case. *Radio'og's*, 1932, xviii, 305.

The case reported was that of a nineteen-year old Italian grocery clerk who had always lived in New York State and was the second patient with systemic blastomycosis to be admitted to the Rochester General Hospital in a period of 2 years. After a slight trauma two months before his admission, this patient noticed a sore on his right foot and developed a fever. The right knee and later the left knee then became swollen and painful, and ulcerations appeared on the right ankle and the right wrist. At the time of the patient's admission to the hospital, examination revealed, in addition to these lesions, a consolidation of the upper lobe of the right

MISCELLANEOUS

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NOTE—THE BOLD FACE FIGURES IN BRACKETS AT THE RIGHT OF A REFERENCE INDICATE THE PAGE OF THIS ISSUE ON WHICH AN ABSTRACT OF THE ARTICLE REFERRED TO MAY BE FOUND

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GENITO-URINARY SURGERY

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